

Wang wants sad DEC houses

by John Kavanagh
WANG has set its sights on leading minicomputer Digital Equipment Corporation (DEC) and aims to get DEC OEMs to help.

The move comes just as some big DEC systems houses are voicing their opposition to the company's policies.

Reg Broughton, Wang UK marketing support director, said: "We are aiming at systems houses in specific application areas and there are a number of unhappy DEC third-party firms here. We will help companies convert their systems to our V.S. range."

"We have done some conversions from DEC's PDP range and have not hit significant problems. We're now working with a DEC systems house to convert a package from a VAX 11/70 to a V.S. 8."

Wang is about to sign three UK systems houses and is aiming for

10 within three months.

US manufacturer Wang expects 30% of its worldwide business to come through third parties by 1990. But in the UK its growth in the systems house market will be much faster. It expects to do 20% of its UK business through systems houses and dealers in 1983-84 and after that third-party sales will grow 5% a year.

Wang's move comes just two weeks after some of DEC's big US systems houses said the company was virtually ordering them to pull out of applications markets in which they had invested millions of pounds in software development. DEC OEM marketing manager Stuart Houghton told systems houses that a US study showed they would have trouble selling general software.

After the meeting Neville Coforty, director of DEC

authorised computer distributor, Hoskyns, said this was "a blatant threat". DEC simply wanted to get into the big applications software market, he said.

John Cade, director of consultancy Fraser Williams and chairman of the Computing Services Association's turnkey systems group, said systems houses were better at selling and supporting applications software than computer manufacturers.

He added: "There's not much to choose between equipment from different suppliers. The difference lies in things like marketing philosophy and engineering."

"From what I've seen Wang's equipment seems very attractive."

DEC does around 45% of its UK business through third parties. Last year its UK business topped £170 million. It has over 13,700 systems in the UK.



BROUGHTON... "We will help companies convert."

Nippon will sell Aregon's database

by Donald Kennett
JAPANESE giant Nippon Electric Co. is to sell Aregon's database relational database system for microcomputers in Japan. The company is to take 120 copies in the first stage of its agreement.

Aregon has implemented its system on the NEC 5200 16-bit 8086-based machine to run its CPM-86 in 64Kbytes of RAM. The system is now implementing its machines from two other Japanese manufacturers.

The system was last marketed in the US last year under the name Global/2000 in which form it was supplied with its own language operating system. It is now being relunched under the new name.

Aregon managing director Ian Pearce said: "The Japanese micro generation programme put relational systems very high on the list. So there is a lot of interest in it."

"We could see three or four years ago that they were looking at mainframe users, because it allowed you to construct queries effectively in a simple command language and make enquiries at the fly of a fairly simple database."

"If micros are to become widespread in offices, you can't help producing programmes to make that many systems workable. So there is a real market need for this type of product."

The company's implementation policy has been to aim for the top six micros first and it has already put the system on IBM, DEC, Tandy and Apple machines. Commodore and Texas Instruments machines will follow. "Those are the ones likely to sell in the highest volumes," said Pearce.



BRUN... "With Trilogy, I can help make history."

Burroughs man of the year leaves

by John Kavanagh
BURROUGHS' man of the year last week left the US computer corporation to join Dr Gene Amick at his supercomputer company, Trilogy.

Leo Braun, who built up the company's operation in Europe from 15 people to 3,000 and moved it from a state of near-collapse in the recession of the early 1980s, has been made Trilogy's chief of international operations.

Earlier this year, as head of Burroughs' subsidiary Memorex's international business, he was named Burroughs manager of the year.

"Memorex International is in 20

countries and last year every one made a profit, so it is a good time to leave," Braun said.

Burroughs chairman Mike Blumenthal had tried hard to keep him, he said, but the parting had been amicable.

"With Trilogy I can help make history," Braun said. "The Trilogy technology is so far ahead of anything else."

Part of Braun's job initially will be to raise extra finance for Trilogy. So far it has backing of \$185 million but more money will be needed by the end of the year to see it through to early 1985, when it expects to launch its first machine.

Labour's plan gets the cold shoulder

by George Black
LABOUR's plan, announced last week, for a National Investment Bank to channel funds into new technology has met with a cool response from leaders of the computer industry.

The party's 15,000-word campaign document focuses on the new State bank as the centre of its strategy to boost the national IT effort and ensure that profits from it come home to this country.

The proposals include a product-based recovery of the economy through collaboration with unions to expand new technology; agreements with unions on bringing in new technology which would safeguard jobs and retrain the workforce; more cash for higher education, research councils and government scientific establishments; more spending on the training of engineers and technicians; and greater emphasis on technological literacy in schools.

The "New Hope for Britain" prescription, which will form the basis of Labour's election manifesto, envisages a new Department for Economic and Industrial Planning overseeing a five-year national plan.

It argues: "There is no shortage of savings in the country available for borrowing today. Indeed, vast

amounts of British money - more than the government's total borrowing requirement last year - are flowing into overseas investment."

But both the National Computing Centre and Computing Services Association were sceptical about the Labour remedy.

NCC head David Fairbairn commented: "It's rather the mixture as before. They are quite right to say the present system isn't working as well as it should, but I have doubts about the proposed National Investment Bank. It would make more sense to aim at strengthening co-operation between existing bodies in the industry rather than creating new ones outside it."

But he supported the idea of a national plan and said Britain needed to adopt a co-ordinated, French-style approach.

CSA director-general Doug Eysenck said: "The proposals left me neutral. I would say there was not much in it for us. There is no shortage of money for investment in computing at the moment. Look at how oversubscribed Datstream was. I don't think pension funds are all flowing overseas. A National Investment Bank wouldn't be particularly helpful to us."

He thought that the Budget, by

boosting software products and helping small businesses to start up, had done more for the industry than Labour's plans would.

But Ted Cluff, secretary-general of the Institute of Data Processing Management, disagreed: "These ideas make a lot of sense to me. We haven't invested enough compared to other countries. Risk capital has not been as freely available here as it has in the US. A national bank is a good idea, because in this way we can get that capital and spread the risk across the whole nation with the government as underwriter."

Altergo goes to the receiver

THE UK's only major IBM software house, Altergo, called in the receivers on Tuesday following the shock departure of American managing director Leonard Levy. The affairs of Altergo Ltd, Altergo (Europe) Ltd, Altergo Services Ltd, Altergo Business Systems Ltd and Altergo Software Ltd are now in the hands of London accountants Thornton Baker.

The receivers want to sell the business assets to preserve the company's trading connections. Seven smaller Altergo operations, including that in Ireland, are not in receivership, but are controlled by those which are.

£1m for CAD

THE government's Computer Aided Design Centre is to stay largely in UK hands and will become a commercial company. A consortium led by ICL, with the UK engineering consultancy W S Atkins and the French services group SIA are paying £1 million for the centre.

Over the next 10 years they will pay the government royalties reflecting the amount of public money being spent to turn the centre from a research body to a commercial firm. That sum could reach £4.5 million. There will be no job losses.

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Forget supercomputer says Nobel winner

by Jack Gee
A SUPERCOMPUTER in response to the Japanese effort would be a mistake, according to 1982 Nobel prizewinner Prof Kenneth Wilson.

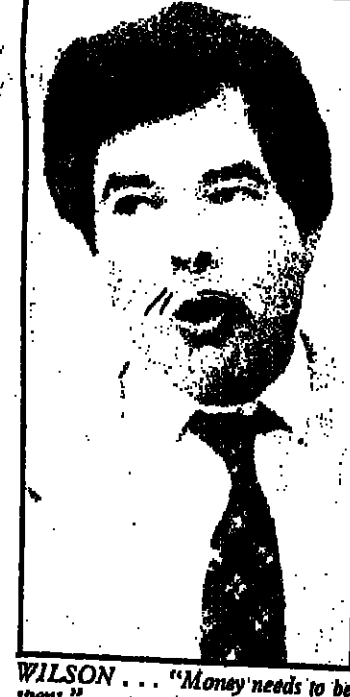
In testimony recently before the House of Representatives and in an interview last week with *Computer Weekly*, the Cornell University (Ithaca, NY) Professor of Physical Science noted that the danger of such a programme was that it could easily wind up selecting too few projects to support, and could also easily wind up supporting a project that was "behind the general deployment of technology."

"Money needs to be spent, but in the right way, so as to assist the ordinary operation of the market," Wilson told *Computer Weekly*. As to amounts, \$100 million a year - which is roughly what Japan, Inc.

is spending - would be about right to start, Wilson suggested.

Moreover, when US industry moves into high gear on such an effort, "there is no suggestion that the US can't beat the Japanese - it's like fielding the Yankees against the Pawtucket Indians. The problem is that the Yankees are not coming on to the field," Wilson said.

Although Josephson Junction technology has been widely touted as holding strong promise for the future, it will be extremely difficult to bring into use, Wilson claimed. Architectural developments hold more promise than components, Wilson said, although technologies such as gallium arsenide, high electron mobility transistors, and others hold promise.



WILSON... "Money needs to be spent."

Philips polishes its delayed office plans

by Donald Kennett
PHILIPS is finishing plans for its delayed entry to the office automation market later this year.

Its communications architecture will be based on the seven-layer International Standards Organisation model for open systems interconnection to integrate both local and wide area networking.

Originally planned for a launch in time for Hannover Fair later this month, the system will now get its first showing at Telecom 83 in Geneva in the autumn. The wide area network is to be called Synphonet, for synergistic Philips open network, and the local network Synphonet, and the office automation concept as a whole Synphonisation.

Philips has yet to decide which of its systems will support software to implement the higher level network protocols. The P5000 word processor and the P3000 microcomputer are likely to have it from early on.

Communication with a variety of systems will also be enabled by the implementation of many formal and de facto standards on the system's node processors, which double as communications servers on the local area network.

Examples are X25 and X21 for packet and circuit switched public data networks, IBM 2780 and 3780 for a variety of other systems and the European Computer Manufacturers' Association Transport protocol for communicating with the new generation of open systems.

The local network, which will support up to 1,000 terminals, is a token passing bus of the type for which draft standards are currently going through the committee and ratification process in ECMA and in the US Institute of Electrical and Electronic Engineers.

It is to be offered in one Mbit and five Mbit-per-second versions for single-channel (baseband) or multi-channel (broadband) cable systems. The broadband type is designed to coexist on the same cable as video and audio communications.

CII doubts its US partner

by Jack Gee
FRANCE's national computer company is pushing for a joint research deal with the UK's ICL and West Germany's Siemens because it is unsure of its US partner.

ICL's chairman Sir Christopher Laidlaw recently held a joint session in Brussels with CII-Honeywell Bull's chairman Jacques Stern and Vincent Etienne Davignon, vice-president of the European Commission and industrial commissioner who expressed support for a joint centre for long-term research.

But in contrast to the stillborn Unidata venture along similar lines in the mid-1970s, Philips has not been invited to participate.

CII-Honeywell Bull is known to be particularly interested in a tripartite effort because it fears that Minneapolis-based Honeywell, which still holds a 20% stake in the French State-controlled firm, may be planning to move out of the development and manufacture of mainframes.

Jacques Stern of CII-Honeywell Bull bases this concern on a recent request from Honeywell to Sesa, a leading French computer services company, to take over the American corporation's stake in a joint venture set up in the United States three years ago.

Sesa and Honeywell joined forces to market data packet switching networks based on France's Transpac network which was designed by Sesa. Jacques Stern founded Sesa and was chairman of the firm until shortly after he moved to CII-Honeywell Bull last year.

Stern has recently been to Tokyo for talks with Nippon Electric Corp. There are rumours in Paris that CII-Honeywell Bull is interested in a partnership with NEC because, like the French firm, it uses Honeywell licences for computer manufacturing.

ICL's Laidlaw told the French business paper *Les Echos* during a recent visit to Paris that he was particularly interested in joint

agreements with other manufacturers on common standards. He said there was no question of reviving Unidata.

Laidlaw added: "We are increasingly going to offer our customers equipment which can communicate with that of IBM. The reason is that at a time when the data transmission networks are multiplying - and are often being extended by satellites - no manufacturer can live in isolation. He has to take into account the environment."

The ICL chairman said that with the decentralisation of computer systems - this requirement would become an even more important priority. He recalled that ICL was now devoting two-thirds of its R&D expenditure to distributed systems and networks.

A staff of 50 is planned initially at the ICL-CII-Siemens research centre. This ought to grow to about 100 in one or two years, Valbonne, on the French Riviera, or Munich is the most likely site.

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BT union strikes to stop Mercury

by John Kavanagh
BRITISH Telecom's most powerful union went on strike on Tuesday to stop its private rival, Mercury, and to challenge government plans to sell off Telecom.

The long awaited showdown between the government and British Telecom and its unions is to be fought over the linking of the privately-owned Mercury communications service to the national network. It follows on the heels of a fighting talk in the Commons by Information Technology Minister Kenneth Baker in the Telecommunications Bill debate.

On the union front it emerged that the Post Office Engineering Union, POEU, was being backed by the National Union of Railwaymen and the white-collar ASTMS.

The NUR had already promised support - Mercury cables will run alongside railway tracks - and its executive committee is now discussing the passing of the Telecommunications Bill and seeking talks with other unions. And ASTMS is arranging talks with Cable and Wireless, one of Mercury Communications' owners, where it has

government is confident it will be honoured."

He added that union action against Mercury would be "a naked attempt to defend a vested interest."

Later, BT said it had signed the agreement with Mercury "of our own free will."

The corporation added: "We have confidence in the common sense of our staff."

The Telecommunications Bill got through its third and final Commons reading by 286 votes to 241. It now passes to the Lords.

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Software engineers get charter chance

by Philip Hunter

SOFTWARE specialists can for the first time call themselves chartered engineers following recognition for a postgraduate Chartered Engineering training scheme by the IEE (Institution of Electrical Engineers). And Rascal Electronics is the first firm to set up its own training under the scheme.

"The title will give a measure of the guy's professional ability," says Rascal graduate development manager Vic Robertson. "Too many software people are narrow in their outlook. At least those who have qualified as chartered engineers will have demonstrated that they appreciate the links between software and hardware testing, and that they are able to take a broader view of problems," Robertson says.

The company will recruit a small number of graduates each year, and make sure they receive two years' training geared towards membership of the IEE. When their training is over, the software engineers submit a summary of their work to a course tutor at the company, who will also be a member of IEE.

DEC bows to user pressure

by Robert Parry

DIGITAL Equipment (DEC) has bowed to market pressure and agreed to support add-in memory from a rival supplier. DEC Field Service will now install and maintain National Semiconductor's range of DEC-compatible products on UK installations.

"Some of our customers are meeting their needs by purchasing NatSemi products," says Grey Carlow, DEC's UK field service new ventures manager. "We believe we can offer our users a better service if we can look after their site as a complete entity."

Previously the installation of "foreign" memory has been a potential problem for DEC's service arrangements of its kit.

And DEC is set to get a chunk of users' unused maintenance money. For the users who plugged-in boards from other suppliers have often not spent the money they set aside for maintaining these systems.

"The whole thing will now be a lot easier for the user of non-DEC memory," says Philip Jones, director of Passim, one of NatSemi's two distributors for the DEC-compatible boards. "DEC can now cash in on this unused maintenance money."

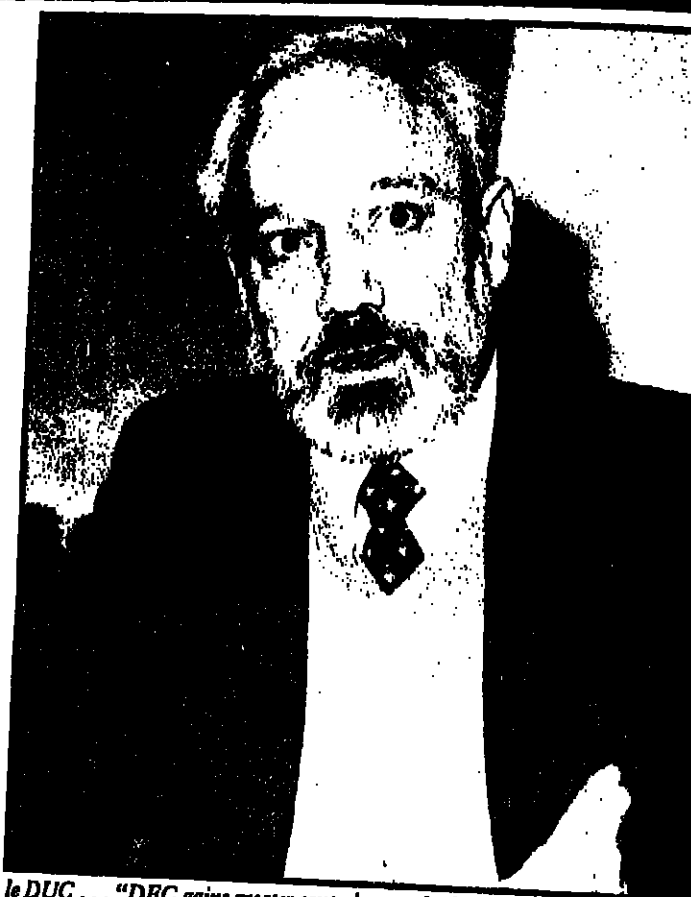
The move should also mean that DEC will find it easier to sell CPUs, adds Harry Case of NatSemi's other distributor, Decade. For example, it can sell Vax machines in minimum memory configurations, with memory requirements being topped up by NatSemi and its distributors, which saves customers the bother of waiting for full memory from DEC.

"By endorsing the NatSemi products, DEC also gains greater control over what's out there," adds Bill le Duc, NatSemi's Product marketing manager for the memory systems. "It's part of

le Duc... "DEC gains greater control over what's out there."

DEC's general trend of moving away from OEMs towards end users."

DEC already supports NatSemi add-in memory in Germany, but only through an informal arrangement. There is no pre-commitment to support, as there is now in the UK. But le Duc intends that the deal here works so well for DEC that it will extend its endorsement to other countries.



SALES BRIEF UK firms take orders from Royal Navy

THE Royal Navy has placed major orders for computer systems in the last month. UK-based Computer Technology of the Hemstead was chosen to supply computer for Project Naxos, a Naval Armament Weapon Data and Analysis System, which is with preparation of weapons issue and their subsequent maintenance.

The Navy has meanwhile placed orders for a computerised patient administration system at its St Andrew's Hospital in Plymouth. This is the BMS system to be bought by services hospital and is now considered standard for Naval hospitals.

Super bargain

CRAY Research has sold a Cray-1M supercomputer for £1 million. The buyer this time is Philippe Petroleum based in Uxbridge, which follows about a year of price cuts announced by Cray last year.

Secure sales

ICL has made two big sales in a total of £180,000 through a Tradepoint sales scheme involving third party software houses. Paramount Insurance and Assurance brokers Ruskell Paramount Insurance has ordered an ICL ME29 minicomputer with motor insurance package sold by React Management Services and Rushion is to have two ICL DRS 20 distributed microcomputer systems with React's Risk 2000 software.

Council update

STOCKPORT Council has ordered an R2800 Telecurve with a 128K minicomputer and two workstations from Rediffusion. The minicomputer replaces the vac punch card equipment in local government applications including payroll and rate rebates.

Philips in store

DEBENHAMS stores has gone to Philips for £94,000 worth of colour viewdata terminals to install in its carpet departments. The terminals will be part of a viewdata ordering system designed by Dae, Debenhams' computer subsidiary, and will be attached to a CMC Reilly computer.

Going Dutch

THE UK subsidiary of US minicomputer maker Harris has sold eight Mind distributed systems to a Dutch building group for about £450,000. The group, Hollandsche Beton will use the computers for communicating with its 15 Dutch subsidiaries.

Zebra dealer

GENERAL Automation UK has signed up its first UK dealer for the recently launched Zebra family of microcomputers. M&O Business Systems, a rumky home based in Abingdon, Oxon, has picked up the dealership worth £250,000 for the microcomputer, which uses the Pick and Xerox operating systems.

BT's choice

AN Essex-based maker of electronic controls has won £250,000 of business from British Telecom. Hitemco has been chosen by BT to supply electronic equipment for the new generation of telephone systems.

Mammoth deal

GTE TELENET Communications of Vienna, US has been chosen to supply all the data communications equipment for the US Department of Agriculture until 1990 in a mammoth contract worth an estimated \$160 million.

Jobs saved in Computel deal

by John Kavanagh

NEARLY 40 jobs have been saved and 30 lost in the takeover of the ICL-based bureau Computel by rival Beaufort Computer Services. And Computel's former owners, the John Mowlem and Costain building and engineering groups, have picked up the tab for the redundancies and for Computel's losses, leaving Beaufort clear of the liabilities of its new business.

In December Beaufort bought Computel's business and name and some of the assets, notably an ICL 2966 mainframe and peripherals. This mainframe is now being moved to Gloucester to join Beaufort's own 2966.

Meanwhile, Mowlem and Costain have formed a new company, Bracknell Computer Centre, as a temporary measure to run the other Computel machine, a 1960, for Beaufort until the work is transferred to the 2966s.

"Most of the staff will leave by the end of April," said Philip Stevens, head of the old Computel, who is retiring. "Most of them are getting jobs, although the operators are finding it more difficult."

"There's no bitterness, only disappointment after having put so much effort into building up something good," he said.

Kevin Kelly, head of marketing at Beaufort, said 37 jobs had been saved. Many of the people would be working from Computel's office in Bracknell, Berkshire. "We have kept all Computel's clients and won some of its prospective customers," Kelly said.

The takeover has created a £9 million bureau with around 180 staff. Computel hit trouble at the end of 1980 when it lost a major customer, British Telecom. After that blow staff numbers fell from 170 to under 100.

Beaufort is owned by a US insurance firm and specialises in systems for the insurance business.

Viewdata is set for an American Dream

by Donald Kennett

Viewdata and teletext services will enjoy a mass market bonanza in the US around 1987, according to market researchers Frost and Sullivan.

A report from the company predicts that, as happened in the UK, broadcast teletext will take off first. Services will reach between 37 million and 52 million households in 1987, accelerating as teletext decoders become standard parts of all television sets.

Viewdata services will attract most of their subscribers from among microcomputer users, the report says. By 1995 micro owning subscribers will number between 11 million and 16 million, but by the year 2000 this number will leap up to 41 million, each spending between \$14 and \$28 a month.

Another 15 million to 20 million subscribers will have adapted television sets rather than microcomputers.

Cable television based teletext services occupying a whole channel each (rather than sharing part of a video channel) will generate

service revenues of \$140 million to \$250 million a year by 1995, with advertising revenues on top of that figure, assuming that half of all households are connected to cable networks.

Providers of timesharing services to home computer users, such as The Source and ComputerServe, will continue to support a variety of display standards, rather than selecting a single videotex display standard, the report says. But, for broadcast teletext, the North American Presentation Level Protocol Syntax proposed by AT&T will probably predominate.

Despite claims from AT&T, CBS, Time Inc, Knight-Ridder and supporters of the Canadian Teldidon system that high resolution graphics capabilities were essential, there was not much evidence in support, the report says. The report also ignores the business market in favour of the domestic.

"Videotex and Teletext Home Market in the United States. Report number 1091. 269pp. \$1,250. Frost and Sullivan, 104-112 Marylebone Lane, London W1M 5EU. Tel: 01-486 8377."

Hatfield Poly man makes it to Minnesota

by Philip Hunter

DALE Johnson, a mathematician lecturer at Hatfield Polytechnic, has been made associate director of the US Charles Babbage Institute, which was set up to record and study the history of computer science.

Johnson joins Babbage at the University of Minnesota in September after acting this academic year out, and will work on preserving and adding to historical records, some of which are held on a computer database.

He will also help choose the Babbage fellow sponsored annually to study the history of data processing. Any university graduate in the world is eligible for the Babbage fellowship, which is awarded with a \$5,000 grant on the basis of the idea for a project on computing history.

Johnson says he was chosen for the job because of his extensive work on the history and philosophy of mathematics which led to



JOHNSON... "Ideal post."

research in the theory of computer science including database systems. "The Babbage post will be ideal," he says, "for continuing this study more extensively."

Babbage was founded by key industry pioneers including Gene Amdahl and Walter Bauer, and lives on the subscriptions of members and the sponsorship of companies like IBM, NCR and Xerox.

Babbage keeps historical information about the industry in various forms including database as well as extensive documents and scientific papers.

Recently, the institute recorded a series of 42 interviews with computer researchers.

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Atari's Kay warns of profit lag

by Howard Karten
THE lag between conceiving a high-tech product and realising a profit from it can be as much as five to 10 years. And, it may not be easy to recognise and nurture a winner, even then, so businessmen charged with realising a return on an investment in technology should be prepared for a lengthy wait.

This was the message delivered by Alan Kay, chief scientist and a vice president of micro maker Atari to a well-attended Massachusetts Institute of Technology symposium on the reality of artificial intelligence last week.

With a generous sprinkling of good humour, Kay recounted some of the probably unavoidable misadventures he witnessed as a researcher at Xerox Parc Palo Alto research centre.

Some of these included bringing to market the 850 word processor instead of the Alto, a state-of-the-art device featuring a high-resolution VDU, a mouse, a bit-mapped screen, and other advanced features, apparently failing to bring to market the Dynabook, a small computer the size of a thick writing tablet, and apparently failing to market a semi-portable computer built several years ago which looked remarkably like an Osborne unit.

Part of the problem, Kay averred, is that predicting the future accurately or usefully is a particularly difficult task, and one which has often been done poorly even by executives at organisations with presumed expertise in marketing technology.

As an example, Kay noted, most



KAY... "Businessmen may endure a long wait for profits on technology investments."

observers failed to predict the size and even the phenomenon of personal computers.

One solution, Kay told the mostly-Fortune-100 company at-

tendees, is to "invent" the future. Moreover, one way to do this is to capitalise on what Kay claimed are two universal human themes, or drives: the desire for improved

communications, and the desire for fantasy.

And that, Kay said, is a world where things are simpler and more controllable.

Where is the flood of BT applicants?

by Kevin Cahill
LIBERALISATION of the British Telecom network has produced the flood of applications for equipment approval expected by the government.

John Ververs, director of BABT (British Approvals Board for Telecommunications), the body set up to test devices which will be attached to the BT network after liberalisation, said only one piece and one jack plug have been submitted for approval since 15 October.

Ververs said he had staff at equipment standing by to begin work on any equipment submitted. So far BT's standards for equipment cover phones, modems and jack plugs. The specifications and standards for PABX and more complex exchange to data equipment are not expected to be ready until later in the year.

But the BABT has had its door open for six months and Ververs said he was astonished by the lack of work.

Most industry experts expect a flood of cheap devices from Hong Kong and the Far East and many thought that apparently high charges for testing and licensing equipment were to deter such an "invasion" of imports.

No so, says Ververs. The set of specifications which covers a simple extension telephone is 30 pages long and the minimum lab time for evaluation is three days.

Ververs was responding to recent criticisms, made to government ministers, that the test fees were too high and the delays in grant approval were substantial.

According to reports from the US the average cost of getting approval for a simple extension phone is about \$1,000, or about one-third of the UK charge.

Industry Minister Patrick Jenkins said the telecommunications industry had "not heard the end of the matter" of the BABT charges when he introduced the £5 million funding for telecommunications innovation after the Budget.

But Jenkins and other ministers must now wonder whether their whole notion of a free-fall after liberalisation will now take place.

The only products likely to be deterred by the BABT charges are small UK suppliers, and not many of those appear to exist at present. For a large company like Plessey, £2,000 to £5,000 is insignificant.

The British lack a micro plan

by John Kavanagh
THERE is a lack of microcomputer strategies among British companies and end users are buying their own machines with little consultation with the computing department as a result.

This is confirmed by a survey of National Computing Centre (NCC) members, which shows that 82% of firms with traditional data processing departments now have end users buying their own microcomputers.

And it is data processing managers who should be producing the strategies, according to Ted Cluff, secretary-general of the Institute of Data Processing Management (IDPM).

The NCC survey shows only a third of users call in the data processing department for consultancy, development and support when they get their first microcomputer.

Around 15% never call on the computing professionals and half consult the experts only sometimes.

Yet in 62% of the cases the data

processing department has to ratify the user's decision to buy a microcomputer.

The report concludes that computing staff "do not yet have a well determined role to play in the installation of micros" and that their involvement with end users "appears to be on an ad hoc basis".

Cluff agreed with the findings. "We're nagging DP managers relentlessly on this," he told *Computer Weekly*.

"They're the ones who should be devising the strategies. Too many just sign off user requests for micros for an easy life: they haven't got time to go into each case."

"But there should be proper guidelines so users buy machines which are compatible with each other and their firm's mainframe."

"Ideally the DPM should deal with one micro and one operating system. That way he can have a spare in the cupboard."

"The trouble is that when the user manager or the person he's sent on a Basic course leaves there's no documentation and no

one knows what to do with the micro."

"DPMs agree in principle with the need for rules but they don't go out and lead; instead they wait and react."

"But corporate management are waking up to the fact that the micro might not be a good investment for the company as a whole and they're putting pressure on the DPM."

Meanwhile, the NCC survey shows the use of terminals is growing rapidly.

Local connections to end user departments are expected to grow by a third this year and by 75% between 1983 and 1987. Remote links will grow by 27% this year and 83% by 1987.

The financial sector easily leads the automation league, with 17 terminals for every 100 non-computing staff.

In second place is education and research, with 11.2. These two are way ahead of engineering and retail and distribution trade, with 4.5 each. Government installations trail with 1.1 terminals per 100 staff.

Warring software firms settle security feud

by George Black
THE two-year dispute between Cambridge Systems Group and SKK over a security software product has been settled.

The two American firms clashed in 1981 in their attempts to corner the market for a security programme to run with IBM's MVS operating system. The IBM user group Share had recommended in 1977 that the company should look into developing a security system.

Dissatisfied with IBM's response committee member Barry Shrago decided to tackle the problem himself. With his colleagues Eberhard Klemens and Scott Krueger he developed ACF2 and set up a business called SKK in Chicago to promote it.

ACF2 was designed to control data sharing and provide protection to the computer system through a chain of passwords allocated to terminals, individuals, departments and sites. Its aim was to avoid technical snags which were thought to have cropped up in IBM's own RACF product, as well

as to compete with the European Software Company's solution called Secure.

In 1980 the Cambridge Systems Group of California obtained marketing rights from the developers and recruited Zoran Pirjevec from Pansophic to sell ACF2 in Europe.

When SKK and Cambridge fell out over marketing policy in May 1981, Pirjevec moved to SKK to take charge of its European selling operation. SKK won an injunction in a US court to stop CSG selling the programmes. But in November of that year the injunction was overturned.

Now the territory has been divided between them in an out-of-court agreement. CSG is to sell ACF2 in the US and Canada, while SKK sells it in Europe and the rest of the world. Worldwide support will be provided by SKK.

There are 150 users of the product in North America, about 16 in Australia and 70 in Europe. British customers include ICI, British Leyland, British Aerospace, Midland Bank and Esso.

Doctors get their own DP doctor

by John Kavanagh
DOCTORS in general practice are to have their own computing adviser. A Nottingham GP, Dr Norman Stoddart, has taken the part-time job at the Royal College of General Practitioners, a professional and standards body which has half the UK's GPs among its 12,000 members. The job, called ICI Computer Fellow, is being funded by ICI Pharmaceuticals.

"GPs are in the dark about computing, but we expect explosive growth this decade," said Michael Drury, the college's research division chairman and professor of general practice at Birmingham University. "There is a lot of interest in what computing can do for a general practice and we expect 5,000 systems to be installed in the next few years."

Some GPs are now installing microcomputers under a £1.5 million government scheme to put 150 machines into general practices.

Stoddart will advise on matters ranging from systems design and costs to data protection. He saw



STODDART... Using computers at work and at play.

the value of computers when setting up a medical records system in the mid-Seventies. He took a programming course in 1980, then installed and modified a microcomputer system for his practice.

Stoddart added that he also liked "playing about on a computer at home."

Drury said the college had asked for computing and medical knowledge and teaching skills from the applicants for the adviser's job. Several computer people had applied, he said.

The job is being funded initially for a year although the college hopes the backing will be extended to two years.

BT's Ramis buys top £1 million

by Donald Kennett
BRITISH Telecom has ordered 15 copies of Ramis-11, the database management system, from Mathematica Products Group, in the largest European sale of the software product to date.

With the three copies already held, this brings BT's spending on the system to over £1 million. The further copies will be spread around the country on IBM mainframes, for BT's 1,250 Ramis users.

BT has been a customer of Mathematica for 10 years and uses Ramis as a tool for both DP professionals and end users. It runs one of the UK's biggest computer services bureaux.

BT's copies run on various IBM machines ranging from the 3081 up to the 4331 under TSO and VM/CMS operating systems.

The 10 regions have had most of their work done at large centres by the data processing executives. But several now have their own smaller hardware and others are likely to follow suit.

Calma given blank cheque in glory bid

by Andrew Thomas
A US CAD/CAM systems house has been set the target of becoming the world number one by 1987, and its parent company has given it a blank cheque to achieve it. California-based Calma currently holds about 10% of the market, ranking third behind IBM (18%), and Computervision, which lays claim to over a quarter.

Calma president Bob Benders said that industrial giant General Electric, Calma's parent since early 1981, would make available whatever cash was needed to put Calma in the number one slot within four years.

"The world CAD market will be worth \$5 billion by 1987," said Benders, "and Europe will account for 20-25% of that. By that time, Calma will be a billion-dollar company."

"CAD installations have traditionally been stand-alone, turnkey systems, but last year that suddenly became unacceptable. It's no longer enough to be just a good builder of hardware, users are demanding a more integrated approach."

Calma's new buzz-phrase is "factory of the future", and the most significant of its new products must be CalmaNet, a networking system aimed at linking designers, engineers, and manufacturers, to a common database.

Significantly, Calma's two other new products, a 32-bit, Vax-based system, and a cheaper 16-bit system, both interface with CalmaNet and can talk to each other via a Hyperchannel. Calma's software is built around 64-bit architecture, so that the cheaper system can run the same software as its bigger brother, but slower.

General Electric has invested \$534 million in the factory of the future, and will be the first user of the system," said Jim Carro, Calma's vice-president of European sales. "We see our hardware as vanilla ice cream. It's pretty good, but when you add the toppings - the software - it's terrific."

"Our CAD systems don't taste too good, but try asking us to design an aircraft wing."

* Figures from US CAD/CAM research organisation Darnetech.

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CW7/4



Top US software house bought out

MCCORMACK and Dodge, the big US mainframe accounting software house, has been bought out by Dun and Bradstreet.

Dun and Bradstreet, best known for its company credit checking business and owner of US-based computer magazine *Business Week* and bureau National CSS, paid \$50 million in cash for M&D and will give further sums based on the software house's future performance.

M&D European director Mark Bennett said, "We either had to go public or be taken over. In the US public corporations are constantly looking over their shoulders and worrying about dividends, which would have meant we could not plough enough into research and development."

Now the applications developers have the backing of an organisation with more than \$1.4 billion a year revenue from business information. Its own income last

financial year was £38 million.

Dun and Bradstreet, keen to get a firm hold on the computing world, in 1979 took over the time-sharing bureau National CSS, whose European arm is known as CSS International. National recently spread its operation into software package sales, notably the Nomad-2 information centre, an IBM VM/CMS and plug-compatible system. It also owns the Californian Zytrom, a microfiche retrieval business.

The intention is that M&D will continue to be run as a separate business, with only the founding partners being responsible to Dun and Bradstreet.

At the same time M&D is teaming up with Alghamim Information Management Services to get its products into the Middle East. The Kuwait software company will sell and support M&D's range of packages throughout the region.

The surprise takeover was announced at the same time as ICL's launch of its new Business-29 marketing agreement, in which M&D is involved.

M&D is one of 11 third-party suppliers named in the collaborative agreement on promoting packages for the ICL ME29 mainframe.

Product marketing director Niall Eadie said Business-29 was "not a closed shop" and other names would be added. Talks were going on at present with MSA.

Others whose products have been listed by ICL: Systemsolve, Package Programs, Northern Software Consultants, RTZ Computer Services, Data Sciences International, MGB Computer Services, Management Enterprises, the British company AIM, and the Australian CSF.

ICL wants to add products in the retail, brewing and finance areas.



BENNETT... "We either had to go public or be taken over."

Parwest to farm out 'pirate proof' software

WILTSHIRE software house Parwest is to go into micro software rentals, using a new technique to ward off pirates.

The system works by forcing users to phone the supplier at random intervals to get a number which enables them to carry on. "It's a never-ending sequence that the same number does not recur," explained managing director Keith Park. "The user gets a warning flashed on his screen and then he has maybe three days grace in which to get in touch. After that he gets locked out."

Parwest, with a £250,000 turnover mainly derived from packages for farmers based on Teletext and other multi-terminal micros, has tested its 'pirate device' for three months at several sites. Now Park is satisfied that it is foolproof and is planning to take advantage if it for short-term rentals.

"We want to train business to use our products and then let them take them away to try themselves," he said.



UPSTAIRS DOWNSTAIRS

Whilst many companies may consider automating their offices, they seem happy to let the factory follow its old traditional methods. Upstairs—word processing, automated accounting, and computerised ledgers; downstairs—job sheets, movement dockets and stores notes.

With CMC factory data collection terminals there is now no reason why all shop-floor data should not be entered by the operatives themselves directly onto the company system. Immediate once-only direct entry of data brings many advantages. Now, every company department can work from a common database, all at the same level of update. Everything from goods in, to invoices out—taking in inventories, time and attendance, added value, works costs, ledgers, credit control, and every other aspect of management information on the way.

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Microsoft gives users more power

MORE than 50 hardware manufacturers and OEMs are now being supplied with MS-DOS2, Microsoft's enhanced version of its micro operating system.

Giving details of the update last week, international accounts manager Bob O'Rear, who was responsible for the development of the original version, said: "It puts a lot more power into the hands of applications software developers."

Version 2 is seen as a step in the direction of the Xenix multi-user system, but does not yet include networking.

O'Rear added: "There's probably room for two or even three other products between MS-DOS2 and Xenix."

He would not commit himself to a timescale for completing the project, but said that a 150-strong research and development team in Bellevue, Washington, was committed to carrying it out as soon as possible.

"With MS-DOS2 some four- or five-day tasks can now be done instantly," he said, "because you don't need to write whole programs to do them."

Big steps towards Xenix compatibility have been made with the

new hierarchical directory structure, the "piping" and chaining of programs and other added utilities. O'Rear said the net volume of the update was five six times as much code as version one.

Microsoft customers will get the improved version free under a promise originally made by the firm when the first offering was developed out of Seattle Computer Products 86-DOS operating system.

Help facilities are included in the new version. And users can make up their own command using the batch facility, pipes and output redirection.

Ansi cursor positioning is supported, which lets users write applications involving cursor positioning without worrying about what machine it runs on. Debugging aids have been strengthened.

A tree-structured directory replaces the single-level directory of its predecessor, along the lines of Xenix and Unix operating systems.

The improvements will affect a whole range of major micro manufacturers, including IBM, DEC, Hitachi, Wang and NEC.

Program generator for DEC minis hits UK

A PROGRAM generator for DEC minicomputers which has already achieved success in the US is about to be distributed in this country. It is RIMS/MPG, or the request-oriented information management system/mechanised program generator, and is the brainchild of Rick Roth, a former DEC staff programmer.

Roth set up Information & Systems Research with businessman Ron Morris in Pittsburgh in 1977. It began as a DEC OEM, producing commercial turnkey systems. Then Roth decided to write a program to cut down the time his team spent on coding and debugging. The result was RIMS, which was launched at the Californian Trade show Dexpo in 1981.

The turnkey side of the firm was run down and now ISR is exclusively a RIMS-promoting operation.

Its progress has been limited by cautious marketing—word of mouth has been its principal chan-

nel and apart from trade shows it had never been demonstrated outside the developer's offices until recently. But ISR has built up to a \$3 million a year turnover and counts among its 500 users Olivetti, Polaroid, Fiat, Marwick and Mitchell, National Westminster, Centrefile, Blue Circle Cement in South Africa and leading DEC OEM Digital Systems of Florida.

The generator, which runs on hardware from the PDP 11/03 up to the Vax 11/780, is compatible with all DEC mini operating systems and their lookalikes. Its proprietors claim productivity improvements of as much as 90% and highlight the fact that it creates editable source code.

Now Roth and Morris are setting up distributorships around the world and have given the British and European rights to the newly-formed Delfant Computing of Woodham in Surrey.

Software File is compiled by George Black

APRIL 28 1983

Opportunities in the MIDDLE EAST

ComputerWeekly

Classified Department, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

To reserve space in the MIDDLE EAST FEATURE phone (01) 661 8060. Copy deadline is Monday, April 25

April 13 1983

Hale and hearty — but unspoilt by success

"I AM deliberately conservative," says John Hale. "I don't really want my company to do more than double its income each year."

This would not be everybody's idea of caution, but he goes on to explain his philosophy of business: "If we did I am not sure we would be able to control the situation. Market share at any cost is not our road."

Some companies in this industry, he hints, are trying to grow up too fast and could come a cropper as a result. And he doesn't want his to be among them.

"If you sell a million items at a penny profit on each it's still only a million pence, isn't it? If you aren't making a decent profit on the way then you aren't going to be able to give your customers the support they need. And that is the beginning of a lot of trouble."

Hale became interested in computers as a user of Ferranti's Mercury while on a maths degree course at Manchester University. He turned down an offer to join IBM as an engineer because he felt it was not right for him.

He wanted to get involved in the commercial world, so he went instead to International Computers and Tabulators, ICT — the creation of a merger (he struggled to get his history straight) between Powers-Samas and the British Tabulating Machine Company. He was technical adviser on the ICT 1900, predecessor to the ICT 1900

which was born with the merger of ICT, English Electric and Ferranti in the mid-Sixties.

"I was sold along with the second 1904 to be produced, to the British Motor Corporation at Longbridge and spent two years there looking after the machine."

Then he was dispatched with an ICL 1902 to Singapore, where he stayed three years.

Hale left ICL in 1969 because he wanted to learn more about IBM and about the user side of the industry.

He was employed in Switzerland by Investors Overseas Services (IOS) before the crash, in which Bernie Cornfeld, the company's boss, was sent to jail for fraud offences.

"We could see that the balloon was about to burst and the entire data processing team of about 80 people left as quickly as possible. Most got jobs elsewhere in Switzerland, as I did with Nestlé."

When he returned to Britain, he went to work for Cincom, where he became UK general manager.

In this period his interest was shifting gradually towards the management and support of software products. It was this which decided him, in 1978, to join Management Science America, following in the footsteps of Michael Hunt, who had also migrated from Cincom. He was managing director of MSA's UK subsidiary, but got "a bee in his bonnet" about

DOWNTIME

Alarming sounds mar the environs

ALL things digital are not always beautiful. Look at all the watchmakers, magnificent craftsmen some of them, who have been put out of business by digital watches which, make no mistake, are not pleasing to the eye and fail to make clear the universal link between time, space and movement.

Digital watches are also guilty of polluting our acoustic environment, as conference delegates know only too well. Hardly a second goes by that does not give us the irritating ear-ricking sound of the alarms from these digital monstrosities.

What are these alarms for, one may ask with some idle justification. For many in this pill-popping, hypochondriac age, the purpose is no doubt to remind that some vital medication should be taken.

But most of them, we suspect, are obscure Masonic codes that



enable delegates to communicate without risk of being overheard by perfidious colleagues, invidious journalists or petulant rivals.

But we have reason to believe that a few are tied to the biorhythms, and sound an alarm whenever a change is imminent as determined by the calculator in the watch.

While computer companies wanting to keep journalists in the dark are nothing new, I must admit my interest was engaged when I discovered that the ICL user group, once glad of the occasional mention in these and other less hallowed pages, had unilaterally decided to ban hacks from its

So what's in a name?

WHILE one must applaud ICL's return to naming its machines, rather than calling them something as in its 2.99/47a model 5bvm(4), one must also question the method used of deriving such names as Atlas and Babel.

Atlas, of course, derives from the expression of at least one top ICL man when he learned of the decision to market the large Fujitsu mainframes: "ATLAS, we've got a machine powerful enough to run VME/B!"

Babel, on the other hand, conjures up mystical visions of Arthurian legend, complete with wizards and damsels in flowing cloaks moving gracefully through misty woods.

But Babel's roots are far more prosaic. As a development project, the machine was dubbed the S3.

Users who hide behind closed doors

forthcoming conference.

"We were a bit embarrassed last year when journalists weren't allowed into Robb Wilmet's presentation."

While it's nice to know that ICL CUA wishes to save us delicate and sensitive reporters from being left alone in the bar while Robb de-

Control Data's City Venture Corp, which uses the Plato computer aided education system, has been attacked by the Newham Employment Consortium for its plans for Canning Town (see page 20). CDC's Herb Trader defends CDC's role...



How computer-based education can revitalise decaying inner cities

3 major cities have been untouched by the disease of inner city decay. Millions of functionally illiterate young people are leaving the schools. Unemployment has risen dramatically, especially among disadvantaged youths. Crime has reached frightening proportions — has invaded more affluent neighbourhoods. Government alone has been unable to cope with either the problems or their consequences. For millions, quite rapidly, the future is being foreclosed.

Few would disagree that the root cause of inner city decay are lack of jobs and lack of appropriate education and training opportunities for residents.

Nor would many disagree about the best model for inner city revitalisation. Businesses must be started by community residents — with employees drawn from the neighbourhood.

But to reach that point requires a vast improvement in the quality, quantity and affordability of education and training.

Successful neighbourhood revitalisation cannot occur without upgrading the quality of the present and future workforce, and without enhancing the skills of the local entrepreneurs.

That's where computer-based education and training plays a major role — and the Control Data Plato system has been demonstrated in the toughest environments, including dozens of inner cities, prisons and programs for the handicapped.

But computer-based education is ultimately only as effective as the materials being delivered. There are no short-cuts in courseware development. Even the smallest concession to quality diminishes the learning experience. At Control Data, the process from blank paper to finished, field-tested, high quality courses takes anywhere from 18 to 24 months.

How effective has the Plato system proved to be? The results have been indisputable. For example, Control Data's Fair Break programme prepares disadvantaged people for jobs by training them in basic and vocational skills. More than 10,000 students have enrolled in more than 250 locations across the US since the programme began in 1978.

In San Antonio, Texas, 473 high school dropouts enrolled in the programme during its first year. Of these 378 completed training and 95.5 of those who took the tests passed their high school exams.

In Atlanta, Georgia, of 711 students who were enrolled during the first two years, 645 completed the training successfully and skill levels are now increasing by an

average of 2.5 grade levels in reading and 1.9 grade levels in math for every 40 hours of Plato instruction.

In St Paul, Minnesota, 94 of the 138 students who started a work readiness programme obtained subsidised employment with an average starting pay of \$4.13 per hour, and 25 others went on to further education and training.

In Los Angeles, vocational training provided by Control Data enabled 58 of 60 disadvantaged participants to obtain jobs as entry-level computer technicians in 33 Los Angeles area companies at salaries ranging from \$11,336 to \$15,600 a year.

In addition to questions about its effectiveness, those who doubt the value of computer-based education often express fears that computers will dehumanise the teaching process or teachers will lose their jobs.

Any sceptics who doubt the human element of computers in the learning process should spend a few minutes watching a young child compute a Plato terminal for the first time — or meet the junior high students at one US school who broke into the building in the middle of the night to get more time on the terminals!

Nor are terminals meant to be used for six or seven hours a day — they should never eliminate the warm human relationships between students and teachers. The computer cannot replace any single teacher completely, but it can replace some of the more mundane, repetitive functions every teacher performs.

Too much time is wasted attending to chores which detract from student contact. Computers can do them better — so why not let them?

The role of the teacher is more critical in the computer-based environment than it has ever been, but teachers' roles will change. Fewer teachers may be directly involved in the delivery of learning, but many more may become involved in the creation of new materials and courses.

Computer-based education is a proven tool that can stem the tide of functional illiteracy pouring out of the schools. It can provide the basic skills and vocational training needed by the present and future workers employed by local businesses. And it can provide education for the entrepreneurs themselves.

Taken together, those capabilities make computer-based education a powerful tool for the revitalisation of inner city communities.

10 YEARS AGO

FROM COMPUTER WEEKLY OF APRIL 5, 1973: Datafab 73, due to be held at Nottingham University from April 10 to 12, would encompass exhibits from over 50 organisations and nearly 100 symposium papers... A new job, Record Organisation Based on Transposition, from Software Sciences, was released on to the market for ICL 1900 machines... After 18 months of marketing through Exchange Telegraph, key-to-disc manufacturer Infocore decided to form its own subsidiary, Infocore Ltd, to market and service all Infocore products... Total value of computer facilities installed in government offices and other public service departments in Scotland was about £16 million, the Commons was told...

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS
Thursday, April 7, 1983

The government needs advising

IT is nice to be loved and it is even nice to be wanted. Whatever else the cheering and flag waving of IT82 did for the computer industry it has certainly brought it to the attention of the politicians.

The major parties have all officially recognised what industry leaders have been saying for a long time: information technology will be one of the most important industries for the rest of the century and it needs investment now. It would seem that the only questions on which the politicians now vary is on how much money the industry should have and where it should come from.

This is properly the realm of politics and it should be left to the country to decide.

It should be a cause for rejoicing that the country's political leaders have recognised the importance of our industry. But it is no cause for complacency. However much money the government does put into the industry much will depend on the people administering it and Whitehall does not have an unblemished record of picking or administering winners in areas which it does not fully understand.

Computers and how to sell them is one of these. The dust from the failure of Insac, the plan to sell British software to the Americans, has yet to settle. The final bill for this scheme left little change from £20 million.

And there are few kind words for Insac in any of the five major UK software houses that were initially interested in the scheme. The most charitable comment from them has been that Insac 'only' wasted management time and not much cash.

Imos, the government backed scheme to get into the high stakes game of microprocessor design and production, has yet to fulfil its promise. Aregon, the marketer of UK videotex expertise, is in a similar state.

It is clear that the government will need all the good advice that it can get. As we have pointed out before, the industry is of age, and it is time that its leaders make at least some of their expertise and time available to the country. There should be more involvement in public affairs on the part of the men and women who have experience of the computer industry.

Poor old Telecom

IT IS difficult not to feel sorry for British Telecom. The UK does not have the telecommunications that it deserves and needs. But the fault cannot be laid totally to British Telecom.

It has long been starved of cash for investment by successive governments and is an object lesson in the problems which can beset an industry and service which is part of the public sector. Two of these have been highlighted in the past week.

British Telecom finds itself assailed by its largest and most powerful union, POEU (Post Office Engineering Union) for two of the government's policies. One is the setting up of its rival, Mercury, and the other is the plans to move Telecom itself into the private sector.

At the moment the industrial action is aimed only at the City of London and its financial centres and at the government departments in Whitehall, but the union is firm that it has plans to extend the action.

More galling to the Telecom management must be the financial strictures under which it operates as a public body. These were brought into focus last week when the Treasury released the details of the money clawed back from the European Community. £200 million of this was earmarked for the improvement of the UK's telecommunications system. But this does not mean that Telecom or its users will see the benefits, for it goes into Treasury coffers.

It has long been the complaint of the UK's town halls and local governments that some BBC money earmarked for various types of areas is, in effect, appropriated by the Treasury.

Telecom now finds itself limited by the same iniquitous seeming system.

1984 and all that...

THIS week's example of the strange things people say about computers was sent in by Owen Roberts of Andover, Hampshire, who writes:

The IT revolution was made possible when man made the first transistor, but it really got going when it was realised that millions of miniature transistors could be etched onto a single piece of silicon, and now plastic.

Hitting it on the head

YOUR recent news item about the National Union of Mineworkers studying the likely job losses arising from automation brought back fond memories of a little story in Computer Weekly years ago.

It concerned a system which Data General had sold to some mines in the US. This example of computers acting in the service of mankind involved the installation of a mini down to a mine controlling sensors attached to the roof.

The idea was that this marvelous system would detect new pressure on the roof and warn the miners that it could be about to cave in.

But this turned out to be a great example of expensive over-selling. Your diligent reporter had actually telephoned the National Coal Board to see if the system could catch on among our brothers in the National Union of Mineworkers.

"Well," was the frank reply from the National Coal Board man, "I don't think we need this system. Our blokes usually test if the roof's about to cave in by hitting it with a hammer."

JOHN KINGSTON
Colchester Essex.

Back best innovators

YOUR editorial (CW, March 24) rightly draws attention to the need for an adequate UK information technology policy. Surely, one of its most important elements should be to seek out our best innovators and provide them with adequate backing? Yet this element is at present almost totally lacking, so that only some of our most able inventors and entrepreneurs actually succeed.

Despite the wide variety of sources of finance for computer software and information technology, both from public bodies and from industry, and despite the extensive funds already at their disposal, there is a very serious gap in their coverage. Money for new enterprises is provided only to companies and projects that have already formed management teams of high quality, even though the development of such teams can be very costly.

Support for research and development is usually granted under rather restrictive conditions, with severely limited terms of reference. The supply of new university posts for people of high ability is a mere trickle.

All this means that an outstanding and versatile innovator, whether a researcher or an inventor, an originator of important

software or a designer of a new information system, is all too liable to fall between these three stools. This will almost certainly be the case if he has little skill in business and administration, even though his products meet genuine market needs.

It is tragic that my friend Gordon Hyde, a multi-disciplinary genius who could perhaps have given Britain the lead in fifth generation computers, died just over a year ago in near-poverty, still waiting for support.

What is urgently needed is substantial seed money for these brilliant individuals, perhaps between £20,000 and £100,000 a year, according to their ability and past achievements. These innovators of genius, once found, should be given the freedom and the resources to "get on with the job".

If British public authorities and private financiers do not adopt this policy very soon, then the UK is in grave danger of losing to its Japanese, American and French competitors in the race for microcomputing, fifth generation computers and information technology.

ALAN J. MAYNE
Proprietor
Blue Apples Computing
London N10 2BK.

'Independent' advice

REGARDING the letter on the SSP survey commissioned by IMS which failed to materialise due to "disagreements," we made arrangements for IMS to visit a client's site in order to have hands-on experience of our system but they failed to arrive.

It is unfortunate in our industry that consultants and professionals are able to sell their own product while offering "independent" advice.

Consultants or prospects are welcome to review our proven systems at length but please — no more from IMS.

JOHN REES
Target Computer Group
Cardiff.

Micros for schools

I WRITE to correct a piece which appeared in Computer Weekly recently concerning Control Data offering micros for use in schools.

To avoid confusion I would like to make it clear that this is an initiative being taken only by Control Data Corporation in the US.

PADDY CARLIN
Control Data
London WC2.

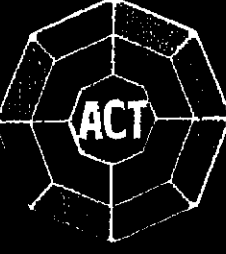


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Liveware File

by Don

EXCITING EASTER? I'LL SAY!

I RAN OUT OF CASH ON THE SATURDAY...

...AND HAD TO PLAY HIGH ST BINGO!

-WOULD THE BANKS DISPENSER RUN OUT BEFORE IT WAS MY TURN?



Vic blows the whistle on the contract market

VIC GROVES, whose initials founded VNG Professional Services which dominates the contract programming market in the North, has at least two passions in life: soccer and his company. In both he professes a dogged belief in fair play.

"The result never justifies the means," he tells me. "I believe this holds in football and in business."

Continuing the football analogy, Groves lays into the National Computing Contract Directory, published by Willoway as an alternative source of contract labour to the agencies. Willoway has spent too much money signing players, Groves believes. Not enough people will turn up to watch the team.

By which he means that not enough companies will subscribe to repay the huge initial outlay on advertising to attract contractors. The fact is, however, that the directory company has so far enticed 3,000 contractors on to its books, and a trickle of companies is coming in at a £380 subscription. Whether that trickle will swell into a sufficient cash flow remains to be seen.

If VNG wanted to issue a directory, it could do so tomorrow, Groves assures me. He says VNG has just as many contractors on its books as there are in the directory. Other agencies also come in for savagery. They charge too much, Groves contends, and are not flexible enough in their charging strategy.

VNG takes an average 17% of the fee it charges its clients, paying the rest to the contractor. This certainly places them below the industry average of 25%.

So how do they do it? By running on a shoestring and keeping costs to the bone, claims Groves. VNG has about 10 staff and about 130 people out on contract, more than 70 of whom are in the North. VNG differs from most of the large agencies in that more than half of its contractors work for three or four companies with which VNG has a big account. Twenty work for ICI, which has nominated VNG as one of just three preferred suppliers.

VNG charges lower than normal fees to these preferred suppliers by cutting its take to just 10%. It pays for overheads, says Groves, and is a good way of netting business.

Anthony Lambie, marketing manager of the VLI group, the UK's biggest agency, agrees that most agencies do not operate as preferred suppliers for big companies. VLI does not cut its rates for bulk supplies of contractors, he says, because it costs nearly as much per head to supply them.

The only advantage in offering discounts to companies which hire contractors in bulk is as a marketing exercise, Lambie believes. VLI knew that ICI was looking for preferred suppliers a couple of years ago and decided not to tender for the contract. "We didn't bid because we couldn't do our heart of hearts believe we could guarantee the quality," he admits.

So the question is at once: Who does ICI think of the people supplied by VNG? "We have been satisfied with the way it has worked," confirms ICI contract management services manager Bernard Buckroyd. VNG has supplied about 80% of ICI's contractors over the last two years, he adds. And other companies would do well to look for preferred suppliers of contract programmers.

And what do the contractors think of VNG? One of them, Mr. Gleghorn, has been on contract to Shell Chemicals in Cardigan under VNG's umbrella for nearly two years. He is content with VNG pay, which averages £380 a week in return for which he is developing an IBM-CICS online system.

So it looks like thumbs up.

GROVES... Result never justifies the means.

WORD & INFORMATION PROCESSING EXHIBITION & CONFERENCE

HOW FAR DO YOU WANT TO GO?

It started with word-processing. It's turned into the information-processing revolution.

And as with all revolutions, nobody can foresee all the outcomes.

But if the future's on show anywhere, it's on show this May at the International Word and Information Processing Exhibition and Conference.

A glance at the Conference programme alongside tells you that this conference is addressing the opportunities and problems of information-processing head-on. In addition to 12 half-day seminars, a full day conference, staged in association with the National Computing Centre, will explore the potential of Teletex.

And the list of exhibitors guarantees that the state of the art will be open to inspection and discussion.

It's the largest dedicated event of its kind in Europe. And though it's entirely accessible to beginners and business buyers, it's also this year's most comprehensive forum of systems designers and developers.

Choose from these conference subjects...

- Word processor selection in 1983
- Microcomputer or dedicated word processor - how to decide
- Word processor communications
- From word processor to quality print
- Selection and training of word processing personnel
- Changes in the secretarial role
- Management strategies for the electronic office
- Cost justifying improved manager and professional support systems
- Word processing and data processing - forging the links
- In-house networks for office automation
- Multi-function workstations
- Integrating image and voice technologies

See these systems in action.

Exhibitors as at 1.3.83

ADC - Advent Data Products - AES Data (UK) - Amide Systems - Apple Computer (UK) - B.E.D. Business Journals - British Telecom - Business Data Capture - Business Systems & Equipment - The Carter-Parratt Group - Computec - Computer Ancillaries - CPT (UK) - Data Logic - Data Recall - Data Transfer Systems - Dictaphone Co. - Digital Equipment Co. - DP Computing - Exon Office Systems (UK) - General Audio & Data Communications - Grundig International - IBM United Kingdom - The Information & Word Processing Association - Inhouse - Inter Systems - International Computers - ISA - Jaccrow Systems Services - Lanier Business Products - Logica VTS - Manpower - N.B.I. Office & Electronic Machines - Office Equipment Index - Office International - Pagetree - Philips Business Systems - Q4 Europe - Racal Information Systems - Silver Reed (UK) - Sony (UK) - S.P.T. Electronics - S.S.C.S. - C.T. Wade & Son - Wang (UK) - Which Word Processor & Office Systems - Wordnet UK - Wordplex - Word People - Wordstar Automation

Design your time at Wembley to get the most out of it.

Use the coupon for as many tickets to the exhibition as you need. And get full details of this year's advanced conference programme. Exhibition and conference combine to produce the sharpest, most authoritative event of its kind in 1983.

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To BETA Exhibitions Ltd, 8 Southampton Place, London, WC1A 2EB

1983 International Word & Information Processing Exhibition & Conference

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INTERNATIONAL WORD & INFORMATION PROCESSING EXHIBITION & CONFERENCE

Wembley Conference Centre, London, 24-27 May 1983

Organised by BETA Exhibitions Ltd, 8 Southampton Place, London, WC1A 2EB



For sale — 500 skilled workers

THE ugly words "rationalisation of production" sent a shiver down the spine of 500 production staff at the photostetting factory of Linotype Paul in Cheltenham. In response to a world printing recession and a move to smaller machines, Linotype decided to cut down from two factories to one. And I need hardly add which of the factories in the UK and West Germany the company chose to close.

But the 500 Linotype people may yet find their feet together on a factory floor. The Inbucon consultancy, which owns Leasco Software, has got together with Linotype in an attempt to sell the 500-strong workforce as one unit.

"There must be somebody in the advanced IT industry who can make use of this lot," hopefully declares Inbucon product director Dennis Henry, who is also in charge of Inbucon interest in Scotland.

Henry says he has been taken on a DP force, but claims other bulk successes in Scotland.

A windscreen factory recently took on double the number of people that Henry had been asked to find work for.

Inbucon has just spent four weeks preparing to sell the collective skills of the Linotype 500. A full colour 16-page brochure has been printed giving glossy references. These will be sent to 1,000 likely employers worldwide.

Henry says advertisements will be placed in the *Financial Times*, all world editions of the *Wall Street Journal*, and the Japanese computer part of these papers.

"As a labour force, it has a balanced range of skills," says Henry, in explaining why the people are being sold as a unit and not broken up according to age, experience or qualification.

Workplace is compiled by Philip Hunter

PUZZLER

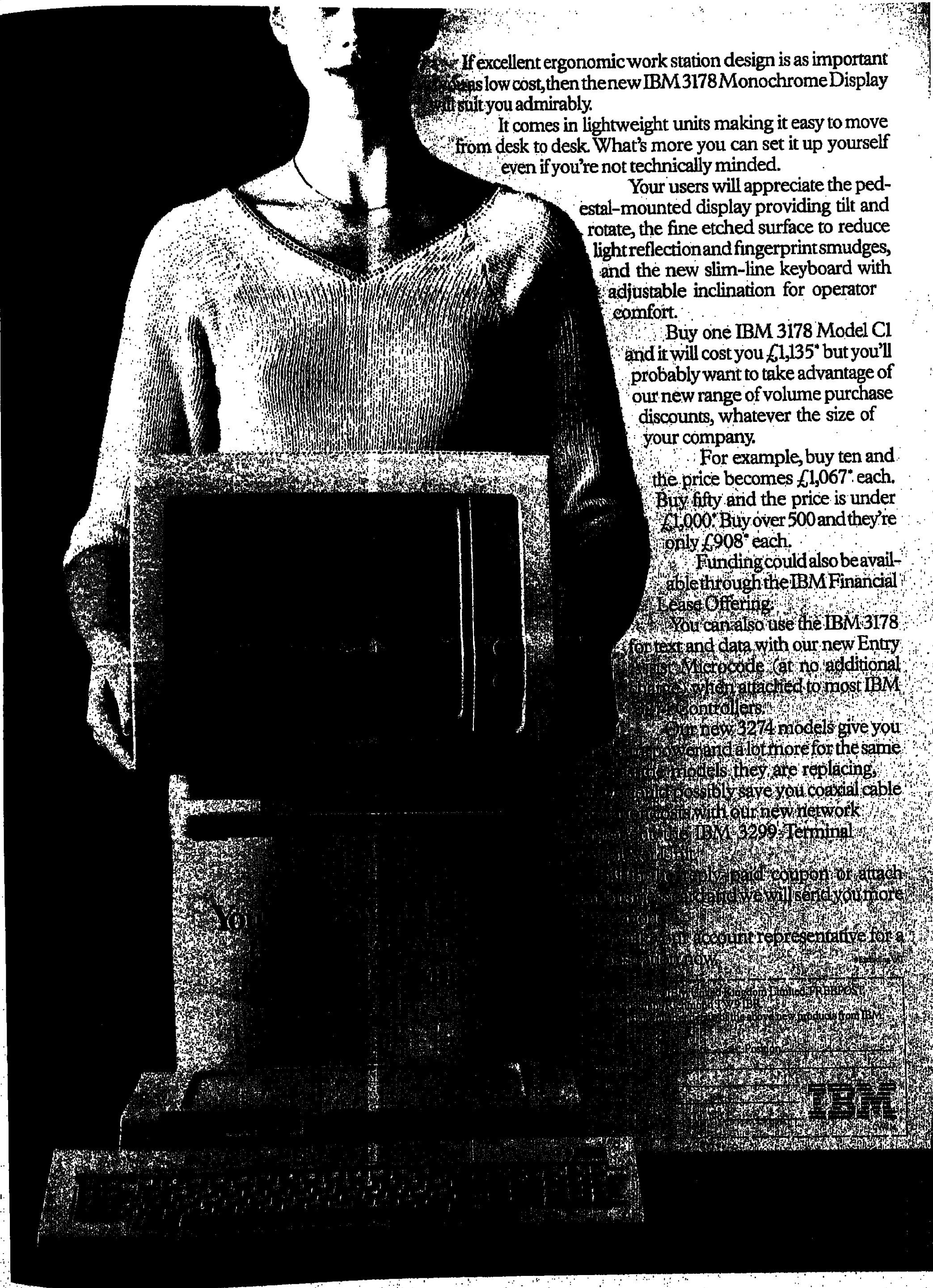
THIS week's rather chauvinistic alphabetic will be difficult to solve without access to a computer, but it's so neat I can't resist showing you:

EVE

DID

= TALKTALKTALK (recurring)

Clue: The letter I is indeed the digit "1". See page 47 for solution.



If excellent ergonomic work station design is as important as low cost, then the new IBM 3178 Monochrome Display will suit you admirably.

It comes in lightweight units making it easy to move from desk to desk. What's more you can set it up yourself even if you're not technically minded.

Your users will appreciate the pedestal-mounted display providing tilt and rotate, the fine etched surface to reduce light reflection and fingerprint smudges, and the new slim-line keyboard with adjustable inclination for operator comfort.

Buy one IBM 3178 Model C1 and it will cost you £1,135* but you'll probably want to take advantage of our new range of volume purchase discounts, whatever the size of your company.

For example, buy ten and the price becomes £1,067* each. Buy fifty and the price is under £1,000*. Buy over 500 and they're only £908* each.

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You can also use the IBM 3178 for text and data with our new Entry Microcode (at no additional charge) when attached to most IBM microcontrollers.

Our new 3274 models give you more screen and a lot more for the same price. Models they are replacing, and possibly save you coaxial cable costs with our new network terminal IBM 3299 Terminal.

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Peripheral trade gap turns into a £270m gulf

An increasing deficit that reached a peak in 1982 is analysed by John Aczel

THE trade deficit for the UK computer peripheral sector has been increasing and reached a high level during 1982. This was due to considerably higher imports of peripheral equipment, as foreign deliveries have been increasing their penetration of the British market in recent months.

As a result, imports exceeded exports by over £270 million in 1982, and in volume the gap widened to over 630,000 units.

In the closing months of last year, the growing deficit continued high, amounting to £18 million in December.

The level of imports has remained at a high level and was £62 million during December, though this was slightly less than that reported three months earlier. For 1982 as a whole, total imports of peripherals reached a record of £705 million.

The growth in volume has been even more significant, with 88,000 units imported in December, against 86,000 in September, while the cumulative figure for 1982 reached over a million units.

It had been expected that imports would slow down during the latter part of 1982 as a result of the recent fall in sterling against the dollar and other foreign currencies, as most importers of peripheral products have been very competitively priced. Thus, the average price per imported unit dropped to about £700 in December as against over £750 in September.

Foreign deliveries have been dominated by US suppliers, and their value continued at a high level, totalling £36 million in December. They accounted for nearly 60% of overall British imports during that month while, for the year as a whole, total deliveries from the US reached a peak of over £410 million.

Other countries have also increased their level of deliveries, particularly some of the Continental suppliers. For instance, imports from West Germany reached £4.6 million whereas, earlier in the

year, it had been averaging about £4 million a month. Higher deliveries from Ireland have also been reported, reaching over £2 million by the end of 1982, while imports from the Netherlands have been showing a marked rise in value.

In the case of Japan, deliveries of peripheral equipment were also on a rising trend and reached a new peak of nearly £4 million in December. At the moment, Japanese imports still represented about 6% of total British imports, but this proportion is likely to rise significantly over the next 12 months.

The latest trade figures reveal that most types of peripheral units

exports have also been increasing and amounted to 35,000 units, a gain of 7% compared to three months ago.

The price of British exports has varied, though there has been some increase in prices charged by UK manufacturers selling in overseas markets. On average, the cost of exports has been about £1,200 per unit, which was marginally up compared to three months ago.

Evidently British manufacturers have taken advantage of the drop in sterling and have boosted their sales overseas as a result. Nevertheless, competition has remained quite fierce in some markets, and British firms have had to fight hard to keep their share at a

satisfactory level.

A significant proportion of British exports have gone to the EEC countries, and useful increases have been recorded in West Germany. Sales to that country went up by 18% to £10.6 million, while a marked rise was also seen in Italy, the Netherlands and Belgium.

In other regions, exports have been mixed, and there was a downturn in deliveries to the Middle East, particularly to Saudi Arabia.

In contrast, higher sales have been reported in the US, reaching nearly £2 million and, British firms have taken advantage of the strength of the dollar to step up their sales in that key market.

Significant gains in exports for certain products have been recorded, particularly for visual display units, where this trend has been firmly upward for some

months. Sales of printers have also risen markedly, but, for other types of peripheral units, the trend has been very mixed.

It is expected that exports will continue to forge ahead, though it is difficult to predict the actual trend in sales.

A further fall in the value of sterling is possible and this will help British companies to increase their sales in Europe and elsewhere.

Prices in some markets are very competitive and British companies will have to watch their price structure closely if they want to improve their performance in overseas markets.

For imports, a further increase is likely and the flood of foreign deliveries may grow even further in the coming months.

Some peripheral producers, particularly in Japan, are likely to step up their sales, especially as the British market for all types of computer products is likely to be quite buoyant during 1983.

At present, British manufacture of peripheral equipment is being increased markedly, and expansion of productive capacity for computer equipment is being planned by many British-based companies. With competition hotting up in this sector, UK firms will face tough market conditions, though there is considerable scope for expansion both at home and overseas.

Expansion of productive capacity for computer equipment is being planned by many British-based companies. With competition hotting up in this sector, UK firms will face tough market conditions.

TABLE 1: BRITISH EXPORTS OF PERIPHERALS

	December 1982	September 1982	January 1983
	£000	£000	£000
Belgium-Luxembourg	1,311	1,254	1,330
France	6,159	6,605	79,204
Germany (West)	10,647	8,990	91,014
Italy	2,492	4,373	46,936
Netherlands	2,532	1,375	18,060
Norway	806	791	7,212
Saudi Arabia	1,648	1,651	15,599
South Africa	1,697	1,235	19,008
Spain	1,644	1,568	18,059
Switzerland	2,460	2,184	18,059
Sweden	1,985	826	18,119
US			12,131

TABLE 2: VALUE OF EXPORTS BY PRODUCT GROUPS

	December 1982	September 1982	January 1983
	£000	£000	£000
Peripheral units	7,388	5,329	53,596
Disc storage units	462	585	5,349
Magnetic tape storage units	413	95	2,305
Other storage units	4,775	3,191	35,990
Printers	464	651	8,275
Readers and punches	15,794	15,276	170,210
Visual display units	353	761	9,073
Other terminals and consoles	14,353	14,475	148,691
Other peripheral units			
Offline data processing equipment			
Punches, verifiers and calculators	22	11	297
Other equipment	911	1,022	9,525

TABLE 3: VOLUME OF EXPORTS BY PRODUCT GROUPS

	December 1982	September 1982	January 1983
	No.	No.	No.
Peripheral units	3,715	2,140	28,155
Disc storage units	180	200	2,153
Magnetic tape storage units	142	48	1,182
Other storage units	5,720	2,220	40,261
Printers	171	163	2,177
Readers and punches	15,399	14,749	167,391
Visual display units	273	309	4,314
Other terminals and consoles	9,661	12,882	124,978
Other peripheral units			
Offline data processing equipment			
Punches, verifiers and calculators	110	11	1,021
Other equipment	669	680	6,641

TABLE 4: IMPORTS OF PERIPHERALS BY SUPPLIERS

	December 1982	September 1982	January 1983
	£000	£000	£000
Belgium-Luxembourg	741	1,080	9,550
Canada	391	702	5,797
Denmark	607	877	8,362
France	2,431	3,600	36,565
Germany (West)	4,559	4,673	54,081
Ireland	2,197	1,732	17,700
Italy	2,413	2,549	39,012
Japan	3,908	3,347	29,772
Netherlands	3,234	2,348	7,516
Spain	531	378	7,516
Sweden	1,843	1,803	20,639
US	36,319	38,210	416,000

TABLE 5: VALUE OF IMPORTS BY PRODUCT GROUPS

	December 1982	September 1982	January 1983
	£000	£000	£000
Peripheral units	13,013	14,949	157,393
Disc storage units	2,257	2,767	36,970
Magnetic tape storage units	839	1,335	9,833
Other storage units	12,526	12,428	132,095
Printers	547	418	3,972
Readers and punches	8,876	8,697	96,643
Visual display units	2,003	4,043	32,165
Other terminals and consoles	22,052	20,527	239,635
Other peripheral units			
Offline data processing equipment			
Punches, verifiers and calculators	29	18	681
Other equipment	722	936	12,297

TABLE 6: VOLUME OF IMPORTS BY PRODUCT GROUPS

	December 1982	September 1982	January 1983
	No.	No.	No.
Peripheral units	18,340	15,313	167,206
Disc storage units	755	2,771	32,239
Magnetic tape storage units	512	679	7,514
Other storage units	21,944	20,937	215,505
Printers	1,825	2,300	15,542
Readers and punches	19,637	14,411	168,597
Visual display units	2,947	4,436	38,869
Other terminals and consoles	22,028	25,535	295,250
Other peripheral units			
Offline data processing equipment			
Punches, verifiers and calculators	178	33	1,228
Other equipment	1,729	2,254	29,025

COMPUTER GRAPHICS

Over 1,000 European delegates attended Camp 83, a Berlin conference on business graphics. John Riley was there

European users turn out in force to get the CAD/CAM picture

THE conviction that a business graphics explosion is imminent in Europe was brought home to 1,300 top European users in Berlin last month.

The occasion, the first of an annual series of events called Computer Graphics Applications for Management and Productivity (Camp), was a major European stock-taking of the applications and potential of computer graphics for both business and engineering. Some 120 European and American speakers gave papers to delegates from 22 countries.

The aim of Camp '83 was to provide a European forum for computer graphics to boost awareness by European users. In particular, top German graphics people were keen to stimulate demand by German users to help the indigenous computer graphics industry.

European graphics companies were present in force, and they clearly benefited from US presentations which pin-pointed problems already experienced in the development of graphics systems in the US.

"We are not academics looking at computer aided design of the 21st century, but aim to show what is on the market today," said Professor Gunter Spur, chairman of the Camp '83 Organising Committee and Director of the Fraunhofer Institute for Production Equipment and Design Engineering in Berlin.

The week-long event, organised by German industry through AMK Berlin in conjunction with the Eurographics Association and the World Computer Graphics Association, took place in the International Congress Centre in Berlin, and was aimed at users.

Integrated with the papers was an exhibition by about 40 US and European computer graphics companies. The US graphics companies, which stand to gain just as much if not more than their European counterparts by increased European user awareness,

dominated the exhibition. US companies included Computervision, Control Data, Digital Equipment, Hewlett-Packard, IBM, ISSCO, Prime and Tektronix.

"The US is here to spy out the land. They know there is a major market in Europe and have come to learn as much as they can," said Tom McLeod, director of Design Technology with Plessey, and the only British member of the programme committee.

McLeod was disappointed by the poor turnout by British graphics companies at Camp '83. Three were represented, although only one, the Horsham-based Sigma Electronics Systems, had a sole stand. Late last year Sigma formed a German subsidiary, Sigmes, to sell its graphics workstations.

Cambridge Interactive Systems' 2-D CAD/CAM designing system Medusa was shown by Applied Graphics Systems.

ICL was absent, although System Consult, a German software house which had stumbled across ICL's Perg, exhibited a borrowed machine. Considerable interest was expressed in the Perg by DP users representing several hundred key German companies, and ICL may have missed a valuable marketing opportunity at Berlin by preferring to put all its effort into the exhausting and anonymous Hannover Fair next month.

"The British absence was noticeable," said McLeod. "If UK vendors want to make an impact on the European market they ought to be here in force, as there are about 1,300 people looking out for what they are going to buy. People who have 20 systems here are not going to fly to the UK to see a 21st."

European contributors to the congress were optimistic that Europe can catch up, despite the US lead in computer graphics. The chairman of the Eurographics Association, Professor José Encarnação pointed out that Europe already had the capability for developing computer graphics

in the 1960s, but could not afford to exploit it.

A recurrent theme was the enormous growth potential for computer graphics, especially via the business graphics sector. Bill O'Brien, marketing manager of Tektronix' Information Display Division, pointed to the growth in the US: "Now over 300 companies provide graphics equipment, while only four years ago there were 160. The worldwide graphics market is considered by several sources to be about \$1.5 billion and the annual growth over the next few years is expected to exceed 30%."

He sees a lift off in business graphics usage, linked with certain trends. "Business users, who have installed four times as many computers as scientific users overall, are beginning to realise that they too can benefit from computer graphics tools for data analysis and representation."

Wider business use will, thinks O'Brien, lead to increased use of colour in graphics, increased human engineering in graphics displays, increased system interactivity with both more intelligence and speed, and to software which is easier to use.

Alan Paller, one of the directors of leading US graphics company ISSCO, and co-chairman of the Camp '83 Organising Committee, said business graphics was slow to develop in the US. "We had solved the main technical problems - expensive hardware, poor quality equipment, non user-friendliness - by 1977 or 1978, but business graphics still didn't take off."

The problem was awareness at the finance director level. The impetus for take-off came two years later in an article in *Business Week* that convinced finance directors that a good presentation with visual aids gives a 67% competitive advantage. We are still waiting for a similar impetus to get take-off in Europe."

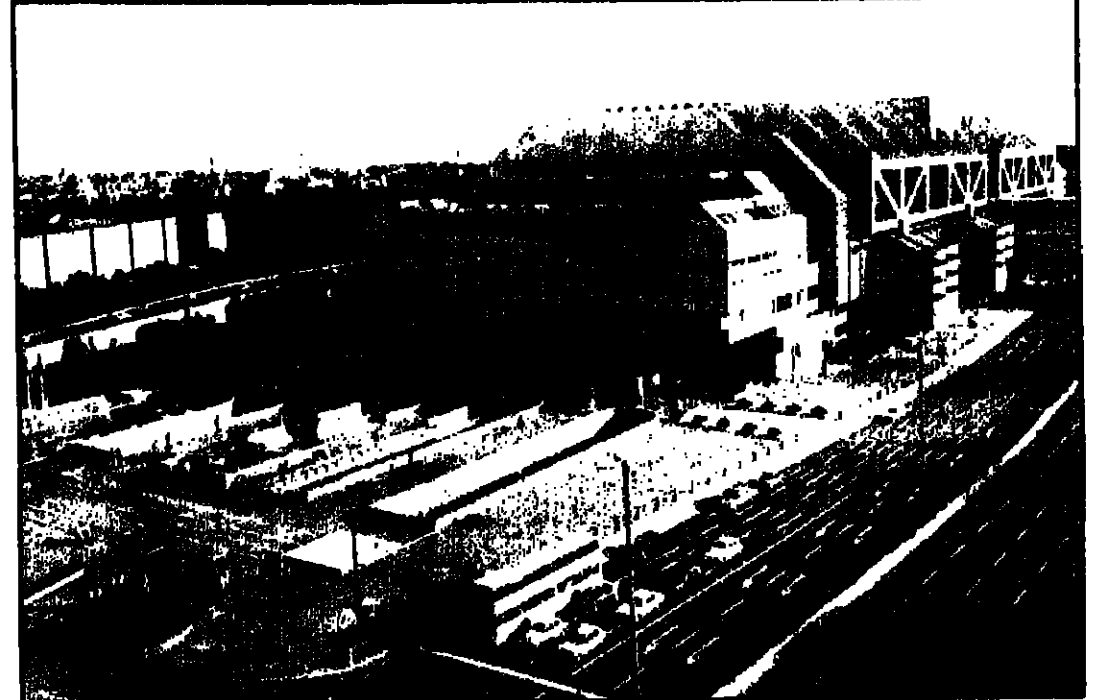
However, Peter Bono, chairman of the American National Standards Institute said: "It may be misleading to think of German companies being several years behind. They may be leading the rest of the world in getting into it. The US faces a battle to upgrade, with subsequent loss of investment. Being first doesn't always win you all the medals."

European contributors considered that Europe is now in a position to take up the challenge of overcoming the two main bottlenecks in CAD/CAM - the machine interface and data communications. Encarnação considered the European impetus to the new GKS (Graphical Kernel System) standard has been a major contribution to data communications.

GKS (Graphical Kernel System) is the first formal computer graphics standard at the interface between the application program and the graphics utility system. The technical work in its development was led by the German Standards Institute, and is currently being adopted by Anal, which has dropped the unofficial US graphics ACM SigGraph Core standard.

There were many papers on electrical CAD, systems integration, management and plant and construction design. Richard Simon, director of CAM product management at Computervision, talked about the synergy between CAD/CAM and robotic technology.

IBM, which occupied the most floor space, launched two application packages for CAD/CAM, one



Berlin's International Congress Centre.

of which, CBDS2, is an interactive graphic CAD/CAM package for the design of printed boards and related wire routing. US graphics software company ISSCO announced new software to provide users of its Tell-a-Graf software with an interactive access to its data sources and its conversion into graphics.

Another US company, Tektronix, introduced its new 4691 ink jet colour copier, and Calma showed its new 7000 and 170 CAD/CAM systems, together with a new volume oriented software package. The other companies showed a range of their current business graphics and CAD/CAM

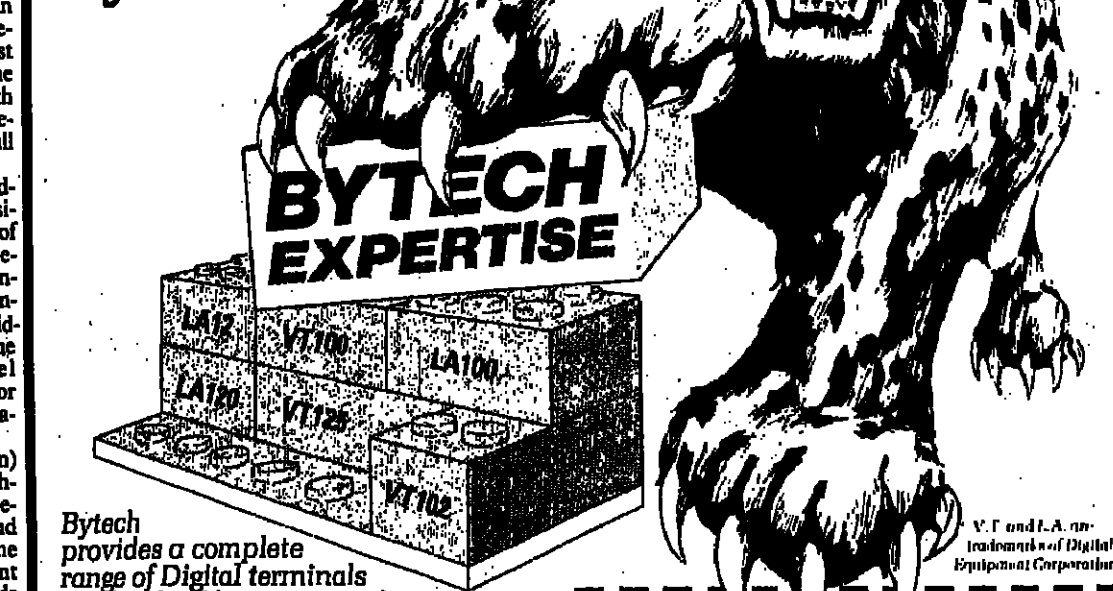
equipment and software. British company Sigma Electronic Systems, which has a raster graphics workstation implementing the GKS standard in firmware, attracted much attention. Sigma marketing manager Ray Spiers said: "I'm surprised by the amount of interest. Peter Bono has been helping people to our stand, and has been impressed."

One Japanese graphics company was present in force. Graphics Computer Corporation, which manufactures computer graphics systems and image processing systems, introduced itself to the European market, and invited applications for its European distributorship. President Dr Kansei Iwata was there and said that there had been a "tremendous response and much interest".

The congress and exhibition is to be an annual event, and will provide a European forum for graphics and computer aided design for the foreseeable future.

Prof Spur summed up the overall trend of which the event is a part: "In the nineteenth century entrepreneurs combined all aspects of a company - sales, distribution, managing - but now these activities have become specialised. With computers we are now moving back to integrating these specialist activities."

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Why does the Data Protection Bill offend so many? Hannan Rose argues defining the Bill leads to understanding



How the lawyers learned to ignore computers

COMPLAINTS about the Data Protection Bill have been legion. The perceived threat to individual liberty has resulted in attacks on the Bill from MPs of all political persuasions and from civil rights people, the legal, medical and social professions, and from the House of Lords — but no word so far from the computer industry. When looking at the source of such widespread concern, then, it is as well to begin at the beginning — which means looking at definitions.

The main ones are in Clause 1 of the Bill — but don't let your attention slip. There are a number of

further definitions at the end of the Bill (Clause 37: "General Interpretation") which include those of "data equipment" and "data material", so they can hardly be considered irrelevant. Indeed, no definitions are minor and they can provide endless matter for debate. Even more pertinently, as one lawyer in the Lords remarked, definitions and phrasing can provide an endless source of income to his profession and it would be sad if the first attempt to legislate for the effects of computing only served to bring both legislation and computing in to public disrepute.

This is a considerable danger. The lawyers who draft, interpret, advise and adjudicate may have a long tradition of dealing with, for example, property, contracts and wills, but have no previous experience with computers. The Data Protection Bill tries to get around the problem by not dealing with computers at all, but with data and the processing of it.

The Bill has raised complaints from the National Council for Civil Liberties, lawyers, doctors, social workers and organisations concerned with giving personal advice such as Citizens Advice Bureaux.

It does not, however, seem to have impinged on the consciousness of those primarily concerned with the operation of computers, even though one of the responsibilities of a profession is generally considered to be an awareness of the implications of the activity for society generally.

The definition of data has raised a few eyebrows. Clause 1 (2) of the Bill offers the following: "Information recorded in a form in which it can be processed by equipment operating automatically in response to instructions given for that purpose".

Government Ministers reading their briefs at the despatch box have stated that "they" (and "their advisers") are aware of technological developments. They know that many things already "can be" processed automatically — and that OCR and voice recognition systems will sooner rather than later bring virtually anything within the scope of the definition.

Further, they are not perturbed by the imprecision of the term "operating automatically", but rather feel that it would be wrong to be too specific.

The government's position is that the definition of data should not be considered on its own, because data is not controlled by the Bill. In fact, it is only "personal data" (defined in Clause 1 (3)) which is governed and then only if it is used.

The definition of "data user" is, therefore, critical to the provisions of the Bill — and it is Clause 1 (5) which defines a "data user".

This new creature in the legal system is defined as "a person who holds data". A person "holds" data if:

(a) the data form part of a collection of data processed or intended to be processed as mentioned in subsection (2) above; and

(b) that person (either alone, jointly, or in common with other persons) controls the contents and use of the data comprised in the collection.

There is, of course, a general complaint that the terminology used in Acts in Parliament has become totally incomprehensible to the ordinary citizen — thus keep-

ing the lawyers employed.

This is exacerbated by the fact that much of the detail is left to secondary, or delegated legislation, which has sometimes been more complex and even longer than the primary law — and the Data Protection Bill is no exception.

Clause 36 deals with the "regulations, rules and orders" which require positive approval by both Houses of Parliament, and one set of rules subject to amendment by either House, and an unlimited number of regulations "prescribing fees for the purposes of any provision of the Act" which merely have to be "laid before Parliament after being made".

It would, however, have been desirable to produce a definition of "data" which could be applied again in the future. And while there are about it, a comprehensive definition of "user" might also be valuable.

More could be achieved — and more simply — if Clause 1 (2) defined "data" as "information recorded in a form in which it is intended to be processed by equipment operating automatically in response to instructions given for that purpose" and Clause 1 (5) defined "data user" as "a person who (either alone or jointly or in common with other persons) controls the contents and use of a collection of data as defined in subsection (2) above".

Even within Clause 1, a further point arose in the House of Lords Committee discussion of the Bill which at least merits a second thought.

Clause 1 (7) defines "processing" in relation to data as "amending, augmenting, deleting or re-arranging the data or extracting the information constituting the data". The Opposition suggested that "transferring" should be added to the list of operations defined as processing but Lord Bilton, the leading Home Office Minister defending the draft, rejected the proposal as unnecessary.

The awful spectre of lawyers earning their living from this legislation arises with a case in point with the definition that personal data had been transferred — but had never been extracted from the original file.

Even in a relatively cursory examination of the Bill such as this, reference has been made to the distinction between "information" and the "data" which constitute it and it is necessary to be sure that this distinction is properly followed through the Bill.

Equally, there are other definitions of the Bill, not to mention the powers given to the Registrar in Clause 16 to seek entry premises "to inspect, examine, operate and test any data equipment found there" and to the Tribunal in Schedule 3, Clause 4 (2) (d) "the inspection, examination, operation and testing of data equipment and the testing of data material". These, of course, depend on the definitions of "equipment" and "material".

At which point, it would seem appropriate to invite members of the computing profession to obtain copies of the Bill as it will be following its Third Reading in the House of Lords.

DATA PROTECTION



READING the small print is by now a way of life for the wary. And it is the "small print" in the form of exemptions from the provisions of Part IV of the Data Protection Act that has been at the root of some of the major political confrontations on the Bill in the House of Lords. These exemptions are sure to raise issues for the "data user" — people using computers — when the Bill comes into effect.

Despite a series of challenges forced to the vote, the government gave no ground whatsoever on Clause 28, which covers personal data held for the prevention or detection of crime, the apprehension of offenders, the assessment or collection of any tax or duty or the control of immigration.

The exemptions particularly remove the primary right established by the Bill for the "data subject" to have access to the information held about him or her and the complementary prohibition upon the "data user" from disclosing such information.

In political terms, the Opposition accepted that the prevention or detection of crime and the apprehension or prosecution of offenders are activities in a special category. But it felt that there was no justification for giving special status to the information in the other categories which was not related to any criminal offence.

In practical terms, the problem for data (computer) users will be that the threat of persons ("data subjects") taking action against them for unauthorised disclosure is not removed. The Bill only provides that in proceedings against any person for contravening the non-disclosure provisions "it shall be a defence to prove that he has reasonable grounds for believing that failure to make the disclosure in question would have been likely to prejudice any of these matters".

It would seem, therefore, that the onus in any case will rest with the defence — and there is no indication of what "reasonable grounds" will be, still less any indication that any of the authorities concerned with these matters will provide evidence — particularly prior, written evidence — to support the defence.

The most likely situations, therefore, are of the friendly local bobby calling upon the car hire company and persuasively asking for assistance in searching for a terrorist, and the Inland Revenue or Customs and Excise requesting help in assessing possible taxes or duties.

Of course, the company could refuse — but is this likely?

As we have seen, they are not going to be able to rely on the support of those "asking for their co-operation" should action be taken against them. And will they even know that Clause 28 (2) still leaves them subject to proceedings in which they will have to prove in their defence that they had "reasonable grounds" for believing that they were acting within the provisions of the legislation?

Further, the protection which the Bill claims to give the individual "data subject" from the invasion of his or her privacy is very much restricted in this area.

Normally, the Registrar would be the "data subject's friend" and act to ensure that personal data has been obtained and processed fairly and lawfully — the first "Data protection principle". The Registrar has powers to prevent contravention of the principles by serving enforcement notices upon delinquent users, or ultimately de-registering them. However, the Registrar will not be able to use these powers if they "would be likely to prejudice the purposes" of fighting crime, collecting taxes and duties and controlling immigration.

The problem is even more serious when matters of national security are involved. It is not surprising that the government has exempted data in this area entirely from the Bill — and from the control of the Registrar.

It is no longer sufficient for "a Minister of the Crown" to certify that personal data are held by a government department for the purposes of safeguarding national security. Nor is "a certificate signed by or on behalf of a Minister of the Crown" (emphasis mine) sufficient to exempt the disclosure — in the interests of national security — of data not primarily held for such purposes or to exempt personal data held outside government.

In all cases, the signature of a Minister of the Crown will be required and "Minister of the Crown" has now been defined as "a Minister who is a member of the Cabinet, the Attorney General or the Lord Advocate".

But there is no review or scrutiny of such exemptions. A "certificate signed by a Minister of the Crown" is, in each respect, "conclusive evidence of that fact" and "a document purporting to be such a certificate" shall be received in evidence and deemed to be such a certificate unless the contrary is proved.

To suggest "review or scrutiny" is not to suggest giving all subjects access to the national security files on them.

There is a certain demonology in the popular imagination both about the information gathered and held "in the interests of national security" and about the power of computers. Putting the two together is likely to create fears about the power of the state.

A number of other countries which already have data protection legislation have placed a person on the staff of the Registrar who already has security clearance, so that there can be some check that exemptions are not abused.

This does not remove the responsibility on any user to provide data in the interests of national security, nor does it give the individual the right to know what data is held about them "in the interests of national security".

All that can be done in this area is to ensure that those invoking this wide purpose — which by its very nature is difficult to define — think before doing so. The present Bill would give them no cause to think at all.

The "official" response which might be anticipated is that ministers will be accountable to Parliament for any misuse of the powers created by the exemptions.

Hannan Rose has read the small print to find . . .

Just who — and why — is exempt from the Bill?

this case. This is particularly so when the Department concerned is the Home Office, where the responsibilities — like those of Ministries of the Interior in other countries — are essentially ones of control (notably police and prisons) and the society is Britain, where the secret services officially do not exist and similarly telephone officials are not topped.

However, this might be a good opportunity to set a new pattern. The review and scrutiny of exemptions for national security could even be an occasion for strengthening the constitutional provisions for parliamentary control over the executive.

The Registrar will be required

to make an annual report to Parliament and this would include a report of whether any instances had been found of the powers of exemption being misused. No details would be given, but Parliament would be given the real authority to control the government on behalf of the citizens as "data subjects".

The case has even greater force in that the government has adamantly refused to grant exemptions to others than itself.

This is important for as Members of the House of Lords pointed out on a number of occasions, there would be a danger that such material would be taken off computers, or that industry and com-

merce would hold back from using computers while there was no parallel law relating to manual records.

This focuses attention on why this issue is of importance to the computing industry and those who work in it. Exemptions might appear to be a political issue, but one of the desirable effects of the Bill would be to create greater confidence in, and acceptance of, computing.

It would be counter-productive if data protection legislation had the effect of encouraging organisations to keep — or even take — their records off computers and increased rather than allayed public fears.

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INNER CITIES

Can computers solve the problems of our inner cities?

A venture that is claimed to revive urban areas has run into opposition in London . . . Boris Sedacca reports

WHEN an organisation is put in charge of spending public funds it is always in something of a cleft stick. If it meets its objectives with the money made available to it, and can show some financial surplus at the end of the day, it is accused of profiteering at the public's expense.

If it spends more money than has been allocated to it to meet these objectives, or if it doesn't meet these objectives within its financial constraints, it is accused of squandering public funds. And when such an organisation is backed by a profit-making company, it can become the subject of critical public scrutiny.

City Venture Corporation, backed among others by Control Data, has found itself in such an unfortunate position. City Venture is involved in inner city regeneration projects. Control Data's contribution to City Venture is based on its Plato educational software.

Plato has evolved over a period of some 20 years from its origins as a co-operative venture between the US government and the University of Illinois. The initial emphasis was on remedial education, or "remediation" in the company's own jargon.

In the aftermath of the inner city riots which rocked the US in 1968, Control Data looked at its own backyard in Minneapolis.

"We can do our part," said Control Data chairman William Norris at the time.

A large part of inner city populations lacked a basic education, so Control Data began to take part in inner city regeneration projects across the US.

Over the next ten years, Control Data continued its work in the Minneapolis/St Paul twin city community, in the process instituting a work experience scheme at Control Data for female heads of households, which allowed working mothers to put in a five-hour workshift during morning school hours.

In 1978, Norris and other business and church leaders decided

that the problem of inner city decay needed a new approach, as a result of which City Venture Corporation was set up.

The company seconded a full-time vice president to the task, Herbert Trader, who was put in charge of urban and rural ventures for Control Data. Trader joined Control Data in 1961, and from 1978 served concurrently as the founding president of City Venture.

He is currently responsible for the overall management and co-ordination of Control Data Worldtech (US), the Control Data Business and Technology Centres, and two Control Data managed consortia, City Venture Corporation and Rural Ventures. He reports to Control Data's executive office.

City Venture's declared long-term goal is economic self-sufficiency for communities. "We did not want only to provide skills for entry-level jobs," says Trader.

"Our Fairbreak programme addressed areas additional to remedial education to cover aspects such as how to find a job and how to keep it. Obviously the value of such a programme was not restricted to inner cities but to things like prison education for example."

Control Data instituted 148 Fairbreak programmes in total, of which five or six had the participation of City Venture.

City Venture currently has ten project areas in the US - and some put heavier emphasis on computer-based education than others.

In recent years, projects have also been instituted outside the US but in the UK. City Venture has begun to attract considerable criticism from local pressure groups.

One of these groups, the Newham Employment Consortium, says: "We are concerned to highlight two of these new projects in Britain, and to expose them for what they really are - massive subsidies to an American compu-

ter company which will provide inappropriate and expensive technology."

The criticisms have some merit, but tend to be one-sided.

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Can areas like this be reborn with the help of computers?

leased to small businesses); a seed capital fund (using money from public agencies, private businesses, financial institutions, and civic groups for investment in high risk businesses); centralised planning and management structures; development of the Thames Wharf/Limmo site; and comprehensive job readiness training, academic education and technical training, all based on Plato.

The Newham Employment Consortium contends that in its discussion draft, City Venture stressed the need for full community participation at every stage of the proposed project but has made little attempt to follow up its initial consultation with community groups.

"We are convinced that different strategies can be developed which are far more cost effective and more appropriate to local needs, and which will result in new jobs and community revitalisation for Newham."

"We strongly urge the London Docklands Development Corporation to reject the City Venture proposals for Canning Town and to give urgent and immediate attention to seeking and supporting alternative proposals which will be responsive to the needs of the community and which will succeed in the stated aims of job creation and community regeneration."

As far as the Newham Employment Consortium is concerned, the most positive aspect of City Venture proposals for Canning Town is that they highlight a number of areas of local need.

"We accept that there is a need for private as well as public investment in the community," it states. Its objections are based on three main points:

(1) City Venture's lack of objectivity as a consultant;

(2) The inappropriate nature of the proposals for Canning Town;

(3) City Venture's record in the US.

"In the United States, City Venture has frequently been criticised for offering the same standard package to each community it goes into. It is precisely this standard package which is now being offered to Canning Town: a package determined by control Data's product and service range and in no way tailored to local needs."

"We are also very concerned that throughout City Venture's draft proposals there appears to be a tacit assumption that the proposals represent a substantial investment of private funds in the community, yet City Venture's projects in the United States have been funded overwhelmingly from city, State and Federal public sources."

"City Venture has been conspicuously unsuccessful in attracting investment from private sources other than from Control Data. In the past, Control Data has taken the opportunity to have its own assembly plants in City Venture project areas. Recently, however, the parent company has closed a number of such plants - just as it has closed its only British assembly

plant, CPI Data Peripherals in Stevenage.

"In every plant closure that we have heard of, Control Data has proposed converting the plant into a Business and Technology Centre, a move which is in line with Control Data's shift in emphasis from hardware production to the sale of services and software."

The consortium argues that City Venture has made no detailed local analysis of the age, sex or skills of unemployed people in the area, no analysis of existing industry or commerce either in Canning Town, in the rest of the borough or in London as a whole, and no summary of existing transport or other service infrastructures.

Referring to Business and Technology Centres, the consortium states: "Despite City Venture's talk of 'A complete range of computer-based technology', their centres have been based exclusively on systems and programs supplied by Control Data and its subsidiaries."

"Again this might not matter much if Control Data products and services were appropriate to small businesses in Canning Town. But Control Data computer systems, based on access by telephone lines to massive and remote mainframe computers, are - as described by

Bradbeer's alternative, though useful as ammunition for the Newham Employment Consortium's criticisms of City Venture, has a somewhat simplifying effect. It is doubtful whether any manufacturer has developed on-premise educational software the same scale as Control Data in its Plato. Micros can play a useful role if the aim is to teach people about computers and programming, but that is not Plato's primary aim."

Plato sets out to teach conventional subjects using computers as the main medium. The Newham Employment Consortium looks at it another way, dismissing the systems as merely an expensive automated book.

It is difficult to establish whether the issue is one of means versus mainframes, or the Newham Employment Consortium wanting more say in the Canning Town project. The question must be whether City Venture should be expected to deal with established authorities and local pressure groups at the same time, and which of the two it should be accountable to.

The company must now expect to be under constant public scrutiny. Its reputation, and that of City Venture in particular, will depend on whether it can make its Business and Technology Centres work. The first of these was opened at the discontinued CPI Data Peripherals plant in Stevenage in February and has attracted 16 new businesses ranging from upholstery and car valuing to the design of computer packages for graphics and automatic test equipment.

Mike Game, BTC manager and former personnel manager of CPI Data Peripherals, describes the centre as "a community of businesses" intended to see vulnerable small enterprises through the first few years of operation.

Diversification often brings about headaches for a company and Control Data has had its fair share of them. Quite apart from the subsidiaries it controls, Control Data is determined to make Plato viable after pouring \$900 million and many years of development into it without showing a profit.

However, Norris is confident of Plato's swing into profitability this year and business worth £200 million in 1984. In the 1990s Norris expects Plato to be the most profitable division of Control Data.

TRADER . . . Seconded by Control Data to take charge of City Venture.

a number of computer experts - best suited to very large corporate businesses or to university applications.

"Such systems are unnecessarily complex, prone to technical malfunction, and several times more expensive than the far more adaptable microcomputers used in other technology centres."

The experts the consortium refers to include Robin Bradbeer of the Polytechnic of North London, former editor of Educational Computing, and chairman of the hobbyist-oriented Association of Computer Clubs. Ian Stoble, assistant editor of Practical Computing, and Penny Oley, described as a Cambridge researcher who has been studying direct access to computers in working class communities in the UK.

Bradbeer is quoted as describing Plato as "a sledgehammer to crack a nut" where it has been used on a £1 million Manpower Services Commission project in Coventry.

He claims that the job could be done at one-tenth of the cost by micros.

Bradbeer also attacks Micro Plato, based on Control Data microcomputers. "Although Micro Plato is less expensive than the central Plato system, it is remains relatively expensive compared to similar systems supplied by other hardware manufacturers."

"The average Plato package is very large; for example, even via a disc unit that can store 11 Mbytes, about 90 discs would be needed just for the basic skills 28-hour course."

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PEOPLE



MicroPro has formed a UK subsidiary and appointed David Butcher (above) as its director. The new company will provide all-round support to MicroPro's UK distributors and its OEM customers. Butcher was previously based at MicroPro's Canadian office and was responsible for sales in most of Canada and the State of Michigan.

Storage Technology has created four senior positions of business manager in the UK. Clive James has been appointed business sector manager for the government and public utilities companies; Graham Shelley as BSM for finance and transportation; Roy Dodds as BSM for insurance industry; and David Howarth as BSM for the manufacturing sector in the North and the Midlands. All appointments have been made from within the company.

Marconi Space & Defence has appointed Peter Lloyd as commercial director. He joined Marconi Avionics in 1969 and was appointed commercial manager of its Rochester unit in 1976.

Kennedy International has appointed Richard Welham as its new service manager. He was formerly with Riva Terminals, where he was engineering manager.

Paddy Sandford-Johnson has joined AMROP International, the international executive search partnership, as director and partner of Canny Bowen & Associates. His experience in the computer industry has included four years in sales with IBM, and five years as computer controller at the Rank Organisation and Rank Xerox.

Microsoft has appointed Scott Old (above) vice-president of international operations. He will be responsible for the firm's operations in Europe and Japan. He was previously the company's director of international operations, and before that was founder and vice-president of Sequia Group in California.

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High Technology information research company Dataquest has appointed John Hayden (left) as senior vice-president for Europe. He was previously founder and managing director of Stuck GmbH, an information exchange and resource sharing company dealing with advanced semiconductor technology. Previous marketing experience includes jobs with Plessey, Corning Glass and Dow-Corning. On Hayden's right is Malcolm Penn, who has been appointed an associate director of Dataquest's semiconductor industry service. Penn has worked in Dataquest's London office as a senior research analyst for the last six months. Before that he was with IFT Europe.

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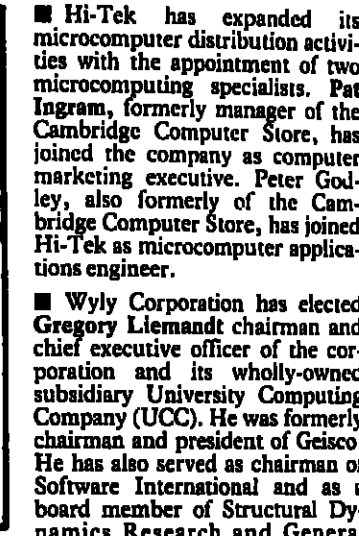
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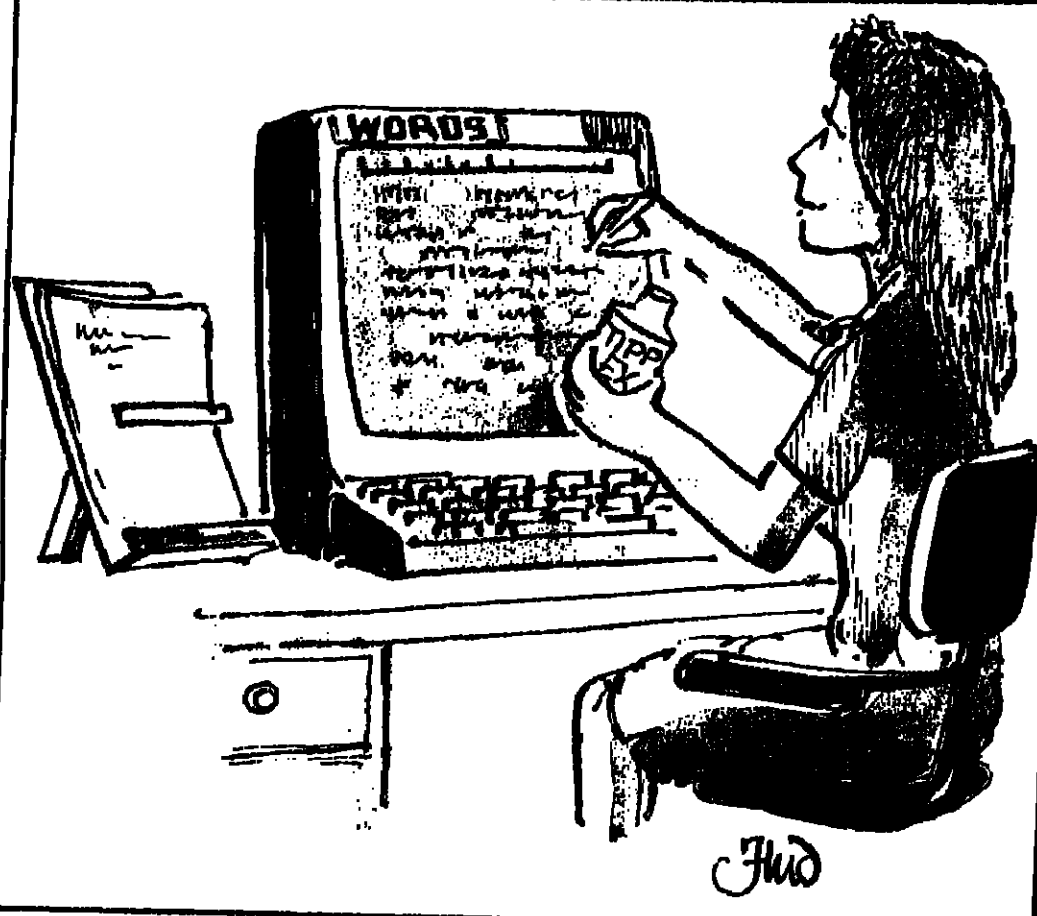
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The trouble with storing words in a messy language

How to get to grips with some Anglo-Saxon snags

IN the old days we expected mathematical calculation would take up almost all the machine time. We were wrong again. Most of the time on a modern interactive computer system is spent in the text editor, not in running programs.

Word processors, online databases, and expert reference systems with shared logic are going to make the situation even more so. Maybe we should talk about "text crunchers", instead of

"number crunchers", when we refer to CPU intensive machines and programs.

When computers crunched numbers, there were many techniques for compressing them in storage such as writing them in binary or floating point formats. Alas, computerised word handling is too new to have a firm set of conventions. This article deals just with the trouble of storing a simple dictionary file.

The first problem is that English is a messy language. The old Anglo-Saxons were a bit like bad programmers; they added patches here and there as needed and the documentation never has kept up with the system development. Improvements have been made, but without any scheme to them.

The only totally regular language is Esperanto. It is the only language that is easy to implement on a computer. Converting the world to Esperanto is not a bad idea, but in the meantime we had better find some tricks for computerising English.

The first question is how to sort a dictionary file. Do all capital letters come before all lowercase letters, like in the ASCII collating sequence? Does each capital letter come before its matching lowercase letter? We could avoid the problem by converting all capital letters to lowercase.

This approach has a bad effect on proper names or the initial word of a sentence, but we can program around some of that. Simply try the first word of each sentence in both upper case and lower case form when looking it up in the dictionary.

After there is an agreement on how to arrange the alphabet, there needs to be an agreement on how to arrange words. Get a copy of the catalogue rules from a library, and see how they handle proper names, foreign words and other things.

Presume that this hurdle is leaped, we now have a very large file that needs to be indexed and compressed.

A good compression technique depends on the fact that the dictionary file is in alphabetical order. The first n letters of consecutive words will be identical. At the start of a new section in the dictionary, n is equal to zero, but most of the time n would be at least one and probably greater.

Therefore, you can replace the first n letters with a number which represents the number of letters it shares with the previous entry. This technique can go on throughout the section.

An example taken at random from a real desk dictionary is the list "Midas, midday, midden, middle", which maps into "Midas, 3day, 4en, 4le" (presuming that the list started with "Midas" of course).

The advantage is that you do get a good compression of data. The main disadvantage is that adding or deleting words is a bit harder than it would be in a non-compressed dictionary. You must read it sequentially from the nearest prior full word.

An algorithmic approach to generation of English words from root words will not work too well. English, like most spoken languages, is an irregular language. Program-

ming and Esperanto are the only place you can find regularity. Some prefixes and suffixes simply do not go with some roots without regard to any logical rules.

Just consider the simple problem of forming plurals. You do not just add an "s". If the word ends in "x", "z", "s", "ss", "ch", or "sh", then add "es". If the word ends in "p" or "f", drop that ending and add "ves".

Get a good secretary's or grammar handbook and look up the full set of rules - there are about 200 of them!

Sometimes you cannot even what the root was from the compound. In English the final consonant before the final "e" is doubled when adding some suffixes. However, the words "writing" and "writing" are not legal.

It would be nice if the dictionary had information for inserting hyphenation. The immediate sections are simply to store the hyphens in the file or to develop an algorithm to compute the proper position for them.



by Joe Celko

Wordbreaks and hyphenation are not the same thing, however. For example, it is possible to hyphenate a word of five or more letters. This is not an allowed wordbreak. It is possible to hyphenate the prefixes "un-", "up-", "in-", and so forth, but the preferred wordbreak would be after the prefix, not in it. This means that the dictionary should also know the order of wordbreak preference.

Algorithmic hyphenation can miss the mark. English is just a messy language, and there is not much you can do about it. The word "therapist" will most likely be divided as "the-rapist" rather than "ther-apist". "Ther-" is an uncommon syllable. Syllables are supposed to have both vowels and consonants in English, right? It is only those Slavs who use words without vowels.

The word "queue" will divide most algorithms up the wall, the pair "qu" should stay together in English, but that leaves three vowels together.

Explicit hyphenation costs extra space in the dictionary file. If we combine the trick of using the initial letter count with explicit hyphenation, some space can be traded for the advantages of hyphenation. We could re-write the list in the numeric compression example by using the numbers to mean the number of letters in the first syllable of the previous word.

Thus "Midas, mid-day, mid-ey, mid-day, 3-len, 3-le". The computer could store large numeric values in binary format and not lose too much space.

PRODUCTS

Pansophic aims to cut the CICS cost

A SOFTWARE product designed specifically for IBM CICS environments has been announced by Pansophic Systems. It is said to overcome the major shortcomings of CICS data processing installations: the backlog of online applications work, the shortage of specially trained CICS programmers, and the growing cost of DP personnel - salaries represent over 50% of the department's total investment.

MIS/OL, an acronym of 'Management Information System/Online', provides automated online screen development and enables any Cobol programmer to write applications without training. One unique feature even allows applications to be implemented without programming.

Furthermore, Pansophic says that unlike directly comparable products already on the market, its online development tool allows unlimited terminal use without imposing a severe CPU overhead. Less than 73K of memory is required and, since all transactions are pseudo conversational, CICS is never unnecessarily tied up.

Worries concerning a shortage of skilled CICS programmers (running in the US at a 30% shortfall) are immediately removed: there is simply no need to learn complex command level techniques. All transactions continue to operate under CICS, but MIS/OL ensures this is totally "transparent". Moreover, this

system eliminates the delays caused by the inefficient and slow execution speed of CICS transactions: applications can be written in days, not weeks.

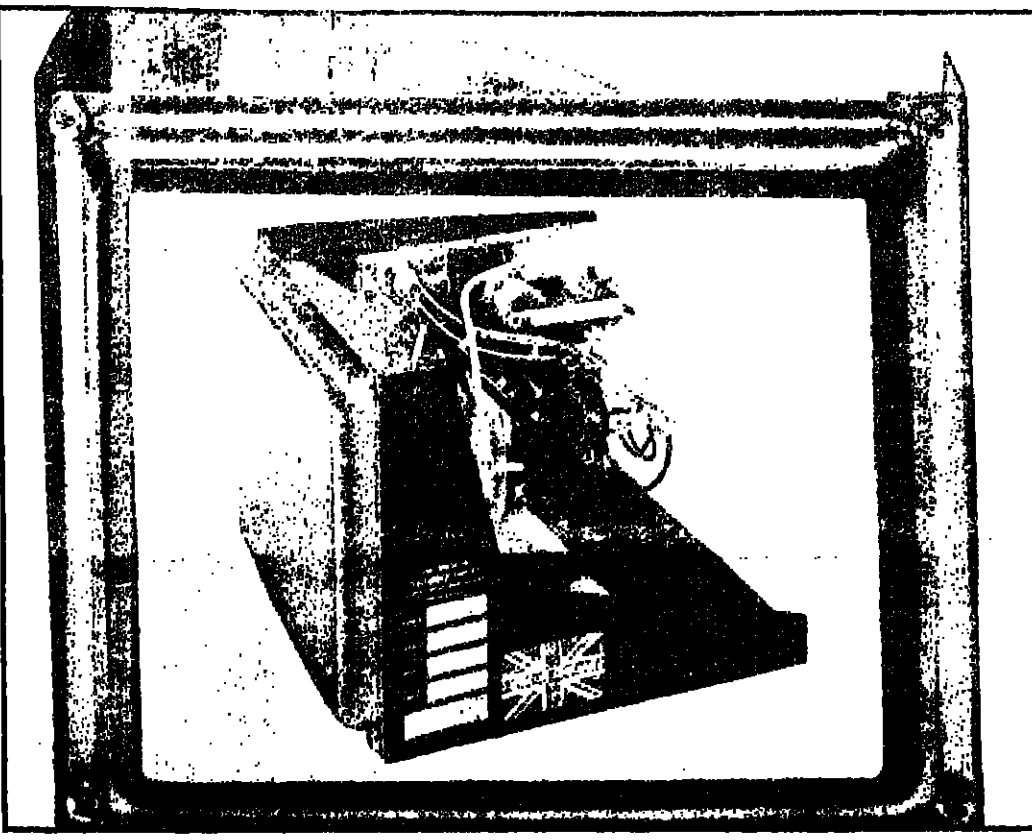
Using facilities embedded in MIS/OL, programmers can develop screens online using various automatic features: these include data editing, reformatting, table look-ups and range checks.

MIS/OL's File Management provision allows access to all standard IBM file structures (including ISAM, VSAM and BDAM) as well as the product's own on-line records. In addition, the MIS/OL multi-level security system may be used in conjunction with CICS security, if required.

To provide management with immediate access to stored data an 'Ad Hoc Query' feature is available. Reports are specified using a free-form English-like language, thus furnishing a straightforward on-line method of responding to information retrieval requests.

GABI (Generalised Application Building and Implementation) enables programmers to specify files, determine screen formats, and implement applications without programming.

MIS/OL is supported by full documentation and Pansophic Systems' comprehensive installation and maintenance service. Pansophic Systems (CW), Achilles House, Western Avenue, London W3 0UA. Tel: 01-993 5985.



The MC700 chassis monitor from KME.

Flat face CRT displays for OEMs

KENT Modular Electronics (KME) has added to its range of Clearline display monitors with a functionally styled seven-inch unit, the MC700.

This compact monitor features an extremely flat screen (three metre radius of curvature compared to 0.6 metre of, say, a nine inch CRT) and a 4:3 aspect ratio.

MC700 has 22 MHz video bandwidth enabling a crisp, clear display of 80 columns by 24 lines to be achieved easily. It has been

designed for microcomputers, test and measurement equipment and medical instrumentation.

MC700 incorporates the CRT scan coil, a single driver board (Type MB12) in a lightweight zinc treated black steel chassis. The driver board makes extensive use of KME-designed thick-film hybrids ("dipstrates") to form key circuit elements, so reducing the number of on-board components and enhancing reliability.

MC700 operates from a 12 volt dc supply and can be specified for use with TTL level or Composite Video inputs. Signals and power are connected via a 10-way standard edge connector.

Resolution is 700 TV lines at the centre of the display, 500 lines at the corners. As an option the screen can be supplied with an anti-glare screen.

Kent Modular Electronics (CW), Maldstone Road, Rochester, Kent ME1 3QL. Tel: (0634) 44712.

Cartridge tape drive is Q-bus compatible

DIGI-DATA has announced another product in its Series 70 microcomputer bus compatible cartridge tape drive systems, based on the Digi-Data Model 6420 quarter-inch cartridge tape drive. The Model 70Q is Q-bus compatible, and joins other recently-launched Series 70 models offering compatibility with RS-232, S-100 Bus and Multibus. It enables Digi-Data to offer good cost effective Winchester disc back-up for the majority of microcomputer systems.

Model 70Q emulates DEC's TMI and TU10 magnetic tape subsystems to provide up to 16.9 Mbytes of formatted storage on the LS-111 Q-Bus. One quad controller, embedded in the Q-Bus, handles up to two 17 Mbyte tape drives. The system is supported by DEC's RT-11V4, RSX-11M, V4.0 or RSTS/EV7.0 operating systems without need for modification.

Digi-Data's 70Q controller has a 16 byte buffer permitting record blocks of up to 65,536 bytes; the effective storage rate is 1.22 Mbytes/minute for eight Kbyte blocks.

The Digi-Data Model 6420 drive on which the 70Q is based records 6,400 bpi data on four tracks, to offer total unformatted capacity of 17.3 Mbytes on one 450-foot tape cartridge.

Users can read or write data in blocking or streaming modes at 20 ips, with a data transfer rate of 34 Kbytes/second. Block searches are performed at 90 ips.

Digi-Data (CW), 18 King Street, Maidenhead, Berkshire SL6 1RF. Tel: (0628) 29555.



An anti-static mat protects staff and computers.

Mat stops the shocks

ANTI-STATIC mats for computer rooms and offices are available from the supplies firm Inmac.

The two-foot mat comes in gold or brown. The smaller, measuring three feet by five, costs £59. A four-by-eight mat costs £95.

Inmac also has heavy-duty black polythene mats for places such as word processing stations. The surface does not impede the movement of castor chairs. The mats are earthed by a six-foot wire. They cost £123 for a mat mea-

suring four feet by five and £38 for a mat of one foot by 1.5.

Inmac says walking across an office carpet can generate tens of thousands of volts of static electricity. Touching a metal object can give a person an unpleasant shock - and even alter the contents of the memory in a computer or terminal.

Inmac (CW), 18 Goddard Road, Astmoor Industrial Estate, Runcorn, Cheshire WA7 1QF. Tel: (09285) 64321.

Random access printing

INTERACTIVE Structures has introduced a new concept in printing buffers - one IS Pipe-Line with random access printing. Users can select sentences, paragraphs, graphs, or pictures from different programs, even different computers in random fashion to compose a finished document. They can then print the finished document quickly and simply, in a single operation. It is available through distributor Pete and Pam Computers.

For example, graphs can be inserted into reports, addresses put in form letters, multiple copies made automatically, and letters put together out of component paragraphs.

To save time, the PipeLine also includes conventional FIFO operation: data is loaded into the buffer as fast as the computer can send it. PipeLine feeds the data out at the right speed for the printer. First data in is the first data out.

Pete and Pam Computers (CW), New Hall Hey Road, Rosendale, Lancashire. Tel: (0706) 227011.

Pascal-2 offers faster speed

A PROGRAM run-time speed 30% better than Motorola's Pascal is achievable using Pascal-2, which is now available under Motorola's Versados operating system. The Pascal-2 compiler provides a full standard Pascal and supports full 32-bit integer arithmetic. The compiler is implemented in Pascal and has been proven over the last two years on DEC systems. It is available from Unit-C or Worthing.

Pascal-2 comes complete with a user manual and incorporates several years of experience of Pascal compilers running on DEC machines. Written in Pascal and designed with structured methods, the Pascal-2 compiler includes internal overflow and consistency checks.

Tested since May 1980, Pascal-2 has proven to be stable and robust in diverse user environments on several combinations of operating systems and processors.

The Pascal-2 language includes several extensions for programmer

convenience, I/O flexibility, and level operations. Convenience extensions include: "External" procedures, for separate compilation; and "include" directive, for combining multiple source files in one compilation; flexible ordering of declaration sections; structured constant declarations; and default "otherwise" clause in the "case" statement.

I/O extensions include random access files and additional parameters in "reset" and "rewrite" to specify external file names.

Low-level extensions include: "And", "or", and "not" operators on integer types; "or" and "not" operators on integer types; "origin" variable declaration that assigns a variable to a specific address; octal and hexadecimal constants; "ref" pointer generation function; "loophole" function for type coercion; and "size" and "bitsize" memory allocation functions.

The Pascal-2 compiler accepts one or more source files to directly

produce relocatable binary object files compatible with the Versados Linker.

A compilation option will generate assembler source code for assembly by the Motorola assembler. The source input to the compiler may be a complete program or a module composed of procedures and functions to be compiled separately and later linked with other routines.

Users developing code for standalone 68000 applications can incorporate the concurrent programming package. The standalone package allows concurrent programming in standard Pascal, using monitors and predefined "primitives" to synchronise concurrent processes. The package allows true priority scheduling and the ability to write device drivers in Pascal.

Sources are included. Unit-C Ltd (CW), Dominion Way West, Broadwater Worthing, West Sussex BN14 8NT. Tel: (0903) 212140.

Oyez system can handle any quantity

QUANTITY surveys are offered three ways of entering data to prepare bills in a package just announced by Oyez Text Processing of London, and Norden Computer Systems. Data can be entered on slips of paper sent to Oyez for processing, input into a remote terminal linked to the Oyez Inter-set IS2000 microcomputer, or data can be fed in from a specially designed electronic drawing board.

The first method is for small practices of quantity surveyors and does not require any hardware, because all the processing is done by Oyez. The second method requires the surveyor to buy a North Star microcomputer, which is connected to the Oyez microcomputer. The main innovation is the third



The Oyez electronic drawing board.

method electronic drawing board equipped with a pen for calculating areas and volumes of parts of buildings.

Oyez Text Processing (CW), Oyez House, PO Box 55, 237 Long Lane, London SE1 4PU. Tel: 01-407 8055.

COMPEC EUROPE '83

CENTRE INTERNATIONAL
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MAY 3-5 1983

See all the latest advances in computer equipment and services.

For commercial and industrial end users, computer specialists, OEM traders, consultants and suppliers of computer systems and services Compec Europe '83 provides an ideal opportunity to see and examine a full range of equipment - small business systems - mini and microcomputers - peripherals and software.

This year's exhibition is the largest ever with an even greater number of exhibitors, and sees a major expansion to accent micros, software and CAD/CAM.

Open Tuesday May 3 10.00 - 18.00 hrs
Wednesday May 4 10.00 - 20.00 hrs
Thursday May 5 10.00 - 18.00 hrs

Entrance to the exhibition is by business registration on a ticket which is *FREE if obtained in advance or 250 BFR if obtained at the door.

Compec Europe is presented by Computer Weekly in association with Ecopress.

*For your Free advance tickets fill in the coupon below-

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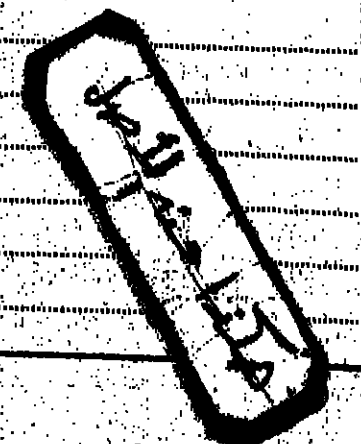
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An important conference for companies buying products to sell on to the user

Buying to sell?

The Computer Trade Conference is a vital opportunity to learn how to buy in systems, software and peripherals and sell them profitably to your market.

The editorial resources of Computer Weekly, Systems International and Practical Computing have combined to stage a two day conference covering the sales of medium and small systems and products to both professional and home computer user.

Ranging from mass storage to software, and from IBM to the best vertical market, the conference will run alongside the first Computer Trade Show at the International Wembley Conference Centre and be held on April 26 and 27, 1983.

Make a date to share the experience of suppliers and vendors alike.



- PROGRAMME TUESDAY, APRIL 26**
- 09.30 Registration and Coffee.
- 10.00 **What hardware should you sell?** - What products and types of devices are here to stay, and more importantly, which can make money for you?
MICHAEL DOCHERTY, Northamber Ltd.
- 10.30 **What software should you sell?** - It is tempting to go for the established products such as CP/M, Wordstar and Visicalc. But is this the best route to success?
RUSS NATHAN, Romtec Ltd.
- 11.00 **Who should you sell to?** - are vertical markets the way forward, or is a more general approach to marketing called for?
JOHN RICHARDS, Joint Managing Director, Optim Computers
- 11.30 Coffee
- 11.45 **Support - how much should you give?** - are cut prices and a cash and carry attitude preferable to comprehensive user support?
TREVOR LAFFERTY, Nexal
- 12.15 **What a software house looks for in a dealer?** - a leading software house explains its selection criteria.
MIKE YOUNG, Managing Director, Systematics International
- 12.45 Lunch
- 14.00 **Selling and licensing through large manufacturers** - you may have a product needed by a major computer company.
SPEAKER FROM BURROUGHS
- 14.30 **Dealing with the majors 1** - ICL and the Traderpoint scheme.
RAY PIGGOT, Director of Traderpoint Sales Division, ICL
- 15.00 **Dealing with the majors 2** - IBM and its attitude to third party vendors.
NIGEL HENZELL THOMAS, Personal Computing Dealer Marketing, IBM UK Ltd.
- 15.30 **Dealing with the majors 3** - DEC and its authorised dealer scheme.
MIKE HARDING, Personal Computing Group, DEC
- 16.00 Close.

- WEDNESDAY, APRIL 27**
- 09.30 Registration and Coffee.
- 10.00 **What's new? - hardware developments** - Everything you ever wanted to know about micro floppies, low cost printers, Winchester and local area networks.
PAUL SHIMMEL, Technical Director, Microscope.
- 10.30 **What's new? - software developments** - database management, operating systems, and the latest trends in applications software.
- 11.00 **Putting it together - the problems of plug incompatibility** - A look at putting together turnkey packages.
MAURICE HAMLIN, Managing Director, Atlas Computer Consultants
- 11.30 Coffee
- 11.45 **Marketing your own product** - a software house case study.
GWYN JONES, Business Micro Systems Ltd.
- 12.15 **Selling yourself** - how to get your name known by the right type of customer.
JOHN MCNULTY, McNulty's Interchange
- 12.45 Lunch
- 14.00 **Don't ignore the man in the street: a case study** - High volume, low cost products may be right for you.
JOHN ROWLAND, W.H. Smith & Sons Ltd.
- 14.30 **Selling into business: a case study** - higher unit costs appear attractive, but is the commercial user a tougher nut to crack than the home user?
TONY MCDOWELL, Managing Director, MKA Ltd.
- 15.00 **Selling a US product in the UK** - there's a vast pool of sell them to the British consumer.
DAVID IMBERG, Ashton Tate.
- 15.30 **A future look** - where will you be in a year's time?
Speaker from ACT
- 16.00 Close.

and here's
your invitation

REGISTRATION FORM

Please complete in block capitals and send to: Conference Administrator, Room 1313, Surrey House, Throwley Way, Sutton, Surrey SM1 4QQ. Tel: 01-643 8040. Ext. 4890 and 4892.

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CONTRACTS

Systems and Programming

U.K. ASSIGNMENTS
VAX/VMS/BLISS West of London
Programmers with above experience required URGENTLY for 3 month contract. Knowledge of BCPL would be an acceptable alternative.
Ref: Elaine 993

CORAL 66/PASCAL - INTEL/PDP NW England
Various levels of expertise required for these 4-6 month contracts to start end April/mid May. Realtime experience a must and knowledge of message switching and MASCOB advantageous.
Ref: Elaine 1001

MOTOROLA 6800 File
Assembler, BCPL an advantage. Realtime applications. 6 months starting ASAP.
Ref: Laurie 998

PROCESS CONTROL FORTRAN
Fortran Programmer, process or industrial control, guidance or avionics experience. 2 months in Central London, 3 months offshore, starting April.
Ref: Laurie 999

IBM 8100 London & Blackpool
COBOL Team Leader, Programmers & Analyst/Programmers. 6-8 months to start ASAP.
Ref: Bridge 1005

IBM 3033 London
Applications Programmers with COBOL, CICS & DLI.
Ref: Bridge 1005

IBM SERIES 1 London
Programmers with good IBM Series 1 experience using RPS operating system and either Assembler or PLI.
Ref: Bridge 1002

IBM 4341 Essex
Programmers with OS/VS1, COBOL, CICS & DLI.
Ref: Bridge 1008

ICL 2900 London & Bedfordshire
VME/8, COBOL, IDMS or IDMS-X, 5 programmers, 6 months to start mid April.
Ref: Laurie 988/994

ICL S25 ASSEMBLER Middlesbrough
Programmers for itemised customer billing system.
Ref: Suzanne 985

Norsk Data System Engineers Oxfordshire
Systems Engineer to handle internal and external products and deal with users. Start date ASAP, duration 2 years.
Ref: Suzanne 982

HP3000 Image Programmer
Start date ASAP, duration 6 months. Straight forward programming, nominal ledger system.
Ref: Suzanne 973

WANG VS80 Programmers City
Programmers required for financial application - Start date April, duration 6 months extendable.
Ref: Suzanne 973

UNIVAC 90/30 DMS TIP Herts
Straight forward programming, minimum of two years experience. Start date ASAP, duration 6 months.
Ref: Suzanne 1000

PDP11/70 Programmers City
Our client requires programmers for various applications i.e. order processing ledgers. Must have Basic + 2 and RSTS/E. Start date April, duration 3 months extendable.
Ref: Suzanne 975

DATAPOINT ARC Programmers Kent
Programmers required to start in June, duration 3 months. Insurance broking systems experience an advantage but not mandatory.
Ref: Suzanne 978

OVERSEAS ASSIGNMENTS
IBM 4300 Gull
Systems Analyst with DLI and able to train others - 6 months duration.
Ref: Bridge 1003

PDP11/RX11M+/FORTRAN Holland/UK
Senior Programmer to work 9 months in Holland, 6 months in UK to start ASAP, working on distribution system. A knowledge of MACRO 11 advantageous.
Ref: Elaine 995

IBM SYSTEM 34/RPGII Holland
Analyst/Programmer required urgently for 4-6 months to work on an order entry system; must be able to work quickly and efficiently.
Ref: Elaine 992

TELEPHONY/PASCAL/CHILL Belgium
Experienced designer/programmers required with telephony knowledge using CHILL/PASCAL.
Ref: Elaine 892

BURROUGHS COBOL France/Belgium
COBOL programmers required with either DMS or LINK for long term projects. Knowledge of French required.
Ref: Richard 1011

OPERATIONS

CONTRACTS Contact Lorna Fraser or Ken Lynn

IBM System 34 Operator Hertfordshire
Good operating experience with knowledge of RPGII. If possible starting immediately for a period of 2 weeks to 3 months.
Ref: C2

IBM System 34 Operator Northampton
Working days, solely running the system from 11/4/83 for one week.
Ref: C3

ICL 1904S - George III Farnborough & Bristol
High standard Gill operators and shift leaders required for contracts lasting one or more years starting immediately and the near future.
Ref: C4

IBM 4331 - DOS/VSE VM SHADOW Brussels
Ref: C5

BURROUGHS B1900 - MCP/DMS Amsterdam
Ref: C6

EUROPE Siemens 7760/7571 Europe
Long term special rates
Operators, Senior Operators, JCL Writers, With BS2000 operating experience and knowledge of terminal network management systems.
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PERMANENT Contact Lorna Fraser
IBM 4341 VM/SP CMS West End to £6,500
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GRADUATE PROGRAMMERS: With a good numerate degree and at least six months' experience in industry, you will probably be making your first move. Some knowledge of communications would be useful but more important is a desire to gain experience in a technically demanding environment. Knowledge of a language such as PASCAL or 'C' is desirable.

The Company is recognised as a market leader in innovative software development, particularly in communications and provides a well-defined career path for the technically motivated individual who also wants to work in a friendly atmosphere.

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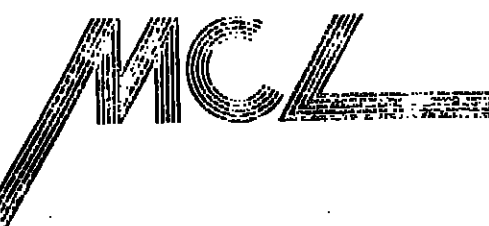
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Ref. A1

INSURANCE IN THE CITY

This company, a major force in the International Insurance Markets, is currently seeking Analyst/Programmers and Systems Designers to work on their IBM mainframe in the City. Your COBOL or PL1 programming background combined with some experience of Analysis and/or design will command a salary of up to £13,000.

Ref. A2

IMS OR CICS? £9,000-£13,500

Our client, based in West London/Middlesex utilizes dual IBM mainframes and is seeking to recruit IMS or CICS Analyst/Programmers for a variety of development projects scheduled for 1983/4.

Ref. D1

COBOL PROGS & ANALYST/PROGS
£7,000-£11,000

The systems development team within this successful London based company is constantly expanding in order to meet demand from its UK subsidiaries. Hence our client is seeking to recruit a number of COBOL professionals keen to progress their career in an interactive, database environment.

Ref. D2

These are just some of the career opportunities that we are currently assisting our clients to fill. We would be pleased to talk to you regarding these and many other vacancies that we are currently aware of. Telephone one of our consultants to discuss your particular requirement and how DP Selection can help you.

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(3124)

SENIOR IBM PROGRAMMERS To £13,000

This dynamic Services organisation based on the Bucks/Berks border is seeking to appoint several Senior Programmers offering at least two years' experience in PL1, 370/303n COBOL or 8100 COBOL. Applicants should possess knowledge of VSAM and the ability to liaise competently with users will provide you with the Database and/or TP and be confident to assume responsibility for small projects when required. Self-motivated individuals will enjoy the fast moving environment and be rewarded with high salaries and quick promotion.

Ref. K1

YOUR 2nd JOB To £10,000

With at least two years' COBOL programming experience, our client can offer applicants an excellent career move into an Analyst/Programmer role at their IBM 4331 DOS/VSE installation in NORTH SURREY. Good IBM knowledge, experience of VSAM and the ability to liaise competently with users will provide you with the opportunity to join a stimulating DP environment working on Stock and Financial Recording systems.

Ref. K2

SYSTEMS ANALYSTS - YOUR NEXT PROJECT

If you can offer at least two years' commercially based systems analysis experience then our client, a very successful financial organisation, could offer you the opportunity to join an on-line, distributed processing system development based upon very powerful minis linked to a mainframe. Career development to the business analyst role exists and a commencing salary of c£10,000 can be expected for this company based in NORTH SURREY.

Ref. R1

COBOL, CICS & DL/1 To £10,000

Our client, located in the CITY OF LONDON, is seeking to recruit PROGRAMMERS or JUNIOR PROGRAMMER/ANALYSTS to join their CICS DL/1 project environment. The people appointed can look forward to gaining exposure to program design and analysis to provide them with career progression. If you can offer around two years COBOL then telephone us now to progress an application.

Ref. R2

Retailing Systems

Thames Valley £13,000+
Experienced designer required to work on new merchandising systems to be implemented on mini computers. Candidates must have knowledge of and experience in this area. Our client intends to sell this product internationally and is able to offer excellent career prospects and relocation assistance. Ref. 0704/A.

CORAL Programmers

North Hampshire £8,000-£14,000
Expanding software house specialising in real time software development in the military and industrial systems field requires additional staff at varying levels. For the junior positions a minimum of six months' programming experience using CORAL is essential. More senior candidates will also need experience of GEC 4000 or DEC equipment. Ref. 0704/B.

Analyst Programmer

Middlesex £8,500-£10,000
'No. 2' required for small department. Responsibilities will include development of systems for sales orders processing, accounting and personnel records whilst maintaining manufacturing systems. Candidates should have two years' experience in a commercial installation and preferably some design skills. Ref. 0704/C.

Electronics Engineers

Surrey up to £12,500
A formal qualification in electronics allied to at least two years' software development experience is required to meet our client's need for people to work on a wide range of complex defence systems. Microprocessor or CORAL experience would be advantageous. Excellent benefits package including relocation is offered. Ref. 0704/D.

Automation Systems

Rural Herts £8,000-£10,000
Subsidiary of large group developing instrumentation and automatic control systems seeks two additional staff to join existing teams. Candidates must have a qualification in a numerate discipline and two years' programming experience. Ref. 0704/E.

Computer Professionals

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Analyst Programmer

North-West London £11,000-£13,000
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London £8,000-£14,000
Unusual requirement for a visually creative programmer with knowledge or appreciation of graphics. Candidates who should have a tertiary qualification should be able to work accurately and quickly to 'journalistic' type deadlines. For this position personal attributes are more important than specific technical skills and full training will be provided on VAX hardware, PASCAL and graphics. Ref. 0704/F.

Office Automation

Herts £10,000-£14,000
A market leader is developing new products for the automated office and requires several technicians at varying levels to join the projects. Candidates must have a minimum of two years' real-time programming experience and ideally knowledge of UNIX and 'C' language although formal training will be given. Previous exposure to LANs and Networking would be advantageous. Excellent career prospects and relocation assistance offered. Ref. 0704/G.

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Systems/Software Engineer

North London up to £12,000
Our client needs systems and software specialists to monitor the work of project teams to ensure that defined quality standards are met in the design and production of high reliability systems. Participation will be required in Design and Technical reviews as well as project progress meetings. Ref. 0704/J.

COBOL Programmers

London/Surrey/Middx. £8,000-£14,000
Two major software and consultancy organisations require programmers with good COBOL skills, preferably gained on IBM, ICL or DEC hardware, to work on a variety of projects in the commercial and financial sectors. Excellent training and promotion prospects for self-motivated candidates able to demonstrate communication and leadership skills. Ref. 0704/K.

Systems Programmer - VME/B

Hants £9,500-£11,500
Our client needs a systems programmer with six months' minimum experience supporting SCL and various super-structure products in a large VME/B installation. Prior work should include two years using VME/B and a total of five years on ICL hardware would be preferred. Ref. 0704/L.

ICL Programmers

London £7,000-£13,000
A rapidly growing systems house with several projects in the financial area requires more staff with three years' programming experience the most recent of which must be 12 months solid COBOL under VME. The rewards offered will depend upon how much relevant experience candidates can offer. Ref. 0704/M.

Real-time Expertise

Surrey Border £12,000-£17,000+
High technology systems house needs designers and consultants to be involved in development and installation of Air Traffic Control and Telecommunications systems. Familiarity with Assembler or real-time/mathematical languages is desirable. Substantial remuneration package and relocation offered. Ref. 0704/N.

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The growth area is in Civil and Defence real-time applications - professional Consultants and Implementors are needed urgently. Applicants must have at least six years in-depth experience on a wide range of projects covering commercial applications, general real-time command and control systems in Civil and Defence markets. Detailed VAX/VMS experience is essential, together with a good degree and technical competence in high-level languages, e.g. Coral, Pascal, Algol 68, RTL2 or Cobol. A proven record is sought in design, test, development and implementation of real-time systems. A knowledge of MASCOFT methodology is desirable.

CONTACT - Pam Hale immediately

(CW6)

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SYSTEMS ANALYSTS

£12-£14,000

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To £8,000

Financial organisation need 12 months' sound commercial programming experience in either DOS or OS/MVS environments. CICS and Database training available where necessary.

PL/1 PROGRAMMERS

To £12,000 + Mortgage

Several PL/1 Professionals with 2 years' experience are required by our client. For the more senior positions CICS and Database exposure is preferred. A number of major development projects are in the pipeline and the company places strong emphasis on career development and training.

MVS/OS/DOS COBOL

£7,500-£12,000 + Benefits

We have numerous openings for Programmers with at least 12 months' IBM Cobol experience. Junior to Senior positions exist in manufacturing, financial, banking and systems house environments.

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Become involved in the development of a comprehensive new international banking system. Our clients offer unrivalled opportunities for bright, young Programmers with COBOL, DOS/VSE, CICS and/or PL/1 experience.

BANKING

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RPG PROG/ANALYSTS to £13,000
This prestigious financial organisation requires several people with a minimum of 18 months' RPG II experience. Preferably you would have gained this in a banking environment together with some exposure to analytical duties. Normal banking benefits apply after three months' qualifying period.

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to £13,500
SENIOR ANALYST
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ELECTRONICS

COBOL, BASIC+, +2 to £9,500
A vacancy has arisen within a manufacturing firm for PROGRAMMERS or ANALYST PROGRAMMERS with a minimum of 18 months' experience. Knowledge of RSTS/E or VMS on VAX is desirable but just as important is the candidate's attitude towards RESPONSIBILITY as the post requires self-motivated and articulate individuals capable of dealing with USERS and able to work under a minimum of supervision.

LIFE ASSURANCE

to £13,000
PROGRAMMING & ANALYSIS
This company, heavily committed to effective information processing and due to continual development, require further staff. IBM COBOL and On-Line experience, particularly if allied to team leadership, would be especially appropriate.

MANUFACTURING

to £10,000
SENIOR PROGRAMMERS
Programmers of Analyst Programmers wishing to capitalise on a Solid COBOL background in a COMMERCIAL environment will find their skills rewarded in this well-known KENT-based company. Working both with ICL and HP hardware, this could be the most CAREER MOVE for candidates who feel their skills and talents are unrecognised in their present posts. There is plenty of room for expansion within this company.

INDUSTRIAL

to £11,000
PROJECT RESPONSIBILITY
Our clients are looking for Analysts with a flexible approach and three years' Analysis experience with On-Line/Database in an IBM environment. Effective communications are needed for the development of Financial and Marketing Systems.

CONSTRUCTION

ANALYST PROGRAMMERS to £9,500
ICL M222 experience is a must. Our client is a well-known company currently seeking COBOL Analyst Programmers. They require mature and responsible individuals willing to undertake development work within a small group. You will need to demonstrate a good application range and a minimum of three years' experience. A good BENEFITS package is offered in addition to a negotiable salary.

MIDLANDS**SOFTWARE HOUSE**

to £9,000
PROGRAMMER/ANALYST
A Programmer/Analyst is required with good DEC PDP-11 experience, probably using BASIC+ with the RSTS/E operating system. Experience in a software house, or project management in a manufacturing environment would be considered ideal.

MANUFACTURING SYSTEMS

to £9,000
ANALYST/PROGRAMMER
BASIC experience on any type of minicomputer is required by this thriving Systems house. Experience of writing bespoke packages, or in the manufacturing environment would be most suitable.

CONSULTANCY

to £9,000
GSD SYSTEMS
Do you have Programming or Analysis experience using RPG on a System 34, or 38, and wish to move into a consultancy role? Our clients offer the opportunity to obtain experience of the new IBM GSD machine, when it is released.

MAJOR INDUSTRIAL

to £9,000
ANALYST
If you are an experienced Analyst, with some programming ability, here is your opportunity to join a new division of an International Manufacturing Company. Our clients are looking for a key member of an exciting new project and can offer excellent scope for development.

TCR are always keen to hear from Systems and Programming staff with Commercial experience who are looking for a change of environment. Contact either office for an informal and confidential discussion.

**Targa Computer Recruitment**

6 Liverpool Street London EC2M 7NH Telephone 01-283 9941 Telex 25851
Monaco House Bristol Street Birmingham B5 7AS Telephone 021-622 2045 Telex 334237

(3126)

Applied Communications Inc., a US Corporation with offices located in key centres in the USA is a major Systems House specialising in on-line systems on Tandem Non-Stop Computers. ACI has installed more than fifty sophisticated switched networks, a significant proportion of which are in the Financial sector. The UK subsidiary has obtained several major new contracts in the areas of message switching and Financial applications which have enabled it to plan further expansion of its European operations. All of these systems are Tandem Non-Stop implementations.

ACI is seeking to fill the following vacancies:

Analyst Programmers

£11,000-£14,000

Applicants should have 4-8 years programming and Design experience in two or more of the following areas:

- Interactive Transaction Processing
- Database Systems
- Retail Banking Systems

Systems Programmers

£11,000-£14,000

Qualifications required are 2-6 years in Systems Programming in one or more of the following areas:

- Interactive Transaction Processing
- Message Switching Systems
- Communications Software
- Operating Systems Development
- Device Handler Development

Cobol Programmers

£9,000-£13,000

Experience of 2-6 years Cobol Programming in one or more of the following areas:

- On-line Transaction Processing Systems
- Interactive Database Application
- Finance/Banking Systems

Successful candidates will be working on the implementation of systems in the following areas:-

Electronic Funds Transfer Systems - Message Switching Systems - On-line Authorisation Systems - Reservations Systems - Videotext Services

ACI specialises in the definition, specification of requirements, system configuration, testing, installation and subsequent support of comprehensive software packages aimed at the Banking, Financial and Point of Sale markets as well as developing customised solutions to client requirements.

All appointments may involve travel to client sites which are usually within the area, although flexibility to work on specific assignments for extended periods away from home will be an important consideration. This could involve travel to the US or other worldwide destinations.

Excellent career development prospects exist in ACI, with promotion to Consultancy and Management position possible in the medium term.

To discuss your future career with Applied Communications, telephone Alan Moxon or Chris Peat on 01-423 2131. During out of office hours (evenings or weekends) telephone Alan Moxon 0582 873106 or Chris Peat 08322 22644 or write to:- Manager, Customer Services, Applied Communications Ltd., 1-9 Peterborough Road, Harrow, Middlesex. HA1 2AZ.

applied communications
the company with the right connections

DALROTH MICRO CONTRACTS HOLLAND Project Leader £400-£550 p.w.

To work on the implementation of a BASIC Interpreter to run on an existing very successful games computer. The Project Leader will have previous experience of implementing a BASIC Interpreter (ideally micro) coupled with good knowledge of 280 Assembler programming. Some hardware familiarity especially interfaces would be advantageous.

Games Designer/Programmer c. £400 p.w. negotiable

To be involved in the creative design and programming of new video games to run on both the client's video games computer as well as a range of competitors' machines. You should be creative and imaginative with previous assembler programming experience, ideally on Intel microprocessors, and should have a knowledge of computer graphics.

For further information, please contact Colin Master, day 01-483 2847 or evenings/weekends 0480 214493 quoting reference 5893.

DALROTH & PARTNERS, 4 HALF MOON STREET, LONDON W1

MICRO TRAINING CONSULTANTS WEST LONDON £10-£11K + CAR

Our client, the UK operation of this leading microsoftware consultancy who specialises in financial packages, are seeking training consultants who can complement their 1983 expansion program.

The prospective candidates should come from a sales environment who can demonstrate experience in the following areas:

- Organise and conduct training courses for both in-house staff and on-site customers.
- Design course material and if possible demonstrations (part of your duties would involve promotions and marketing of their educational service to clients).
- Experience of ACCOUNTING and MICRO software systems.
- Any experience or working knowledge of WORD PROCESSING would be an added advantage.

You must be mature, self-motivated, bright and have an outgoing personality with good communicative skills.

An excellent remuneration package is offered including overseas travel, company car, bonus and BUPA.

For more information on the next career move you'll never regret, Ring SHIRLEY FRANCIS, quoting Ref: 6828.

Lloyd Chapman Associates
123, New Bond Street, London W1Y 0HR (01-489 7761)

SYSTEMS ANALYSTS £10,000-£13,000

Several insurance companies in Surrey and Central London are seeking Systems Analysts and one Business Analyst from insurance environments with at least two years' experience. Also Senior Analysts are required with four to five years' experience for an ICL installation in Surrey, any machine experience for LEEDS, and a HEWLETT PACKARD person for the WEST HOME COUNTIES.

PROGRAMMERS (COBOL or PL1) £8,000-£13,000

Two years and upwards of COBOL programming experience is required for an ICL installation in SLOUGH, two senior people with DATABASE for HONEYWELL installations situated WEST OF LONDON and several IBM experts for CENTRAL LONDON. Also required are PL1 Programmers for SURREY and KENT.

SNR. PROJECT LEADER (DEFENCE) £ EXCELLENT

At least 10 years' design experience is required using MASCOOT + CONTEXT, ideally with some CORAL 86, for real time defence applications. First six to nine months in Dorset and then at base in BERKSHIRE.

PROGRAMMERS (Not Applications) £ Neg

Graduates with upwards of 18 months' experience of small business systems on MICROS using ASSEMBLER are required for SURREY. Other micro languages also welcome.

SOFTWARE ENGINEERS £8,000-£14,000

Various grades of Software Engineers are required for engineering and defence applications in the Home Counties. Microprocessor experience especially INTEL with ASSEMBLER would be an added advantage.

AMES PERSONNEL

8 CHART WAY, REIGATE, SURREY, RH2 0NZ
TELEPHONE REIGATE (07372) 22318 or 22310

BOX NUMBERS

Box number replies should be addressed to:
Box Number
c/o Computer Weekly
Quadrant House, The Quadrant
Buxton, Surrey SM2 5AG

ANALYST/PROGRAMMER £18,000 to £20,000 tax free

A major Communications Systems organisation based in Riyadh, Saudi Arabia, wish to recruit an Analyst/Programmer with an IBM 34 mainframe on COBOL background. Financial systems applications with experience in modifying packaged software and the ability to manage a small EDP department on a day-to-day basis would be an advantage.

Additional benefits include free accommodation, 30 days' leave, car, medical, air fares, etc.

PROGRAMMERS DIRECT CONTRACTORS REQUIRED Up to £450 p.w.

For well-established software house, in easy reach of central London. Must have at least three years' good COBOL experience on IBM with MVS or DOS/VS. Top rates will be paid to those who can make an immediate contribution to our ever-growing development requirements. Please send C.V., and state availability, to:

BOX 1253

YEOVIL DISTRICT COUNCIL

Treasurer's Department
SYSTEMS ANALYST/PROGRAMMER
S.O.1 £8,568-£9,231
(plus 10% shift enhancement)

This new post has arisen due to an increase in the Council's computing activities.

The Council operates an I.C.L. 2946 which drives a number of on-line terminals and systems and has a considerable forward development programme.

The successful candidate will join a small but energetic team and will be required primarily to assist in the development of new and revised systems. Two years' experience in RPG2/COBOL on-line programming is essential and knowledge of I.C.L. operating systems will be an advantage.

Situated in pleasant countryside, Yeovil is convenient to both Bristol and Exeter. Financial assistance towards relocation expenses up to £1,800 and housing accommodation will be available in approved cases.

Application forms and further details can be obtained from The Personnel and Management Services Officer, 81 Preston Road, Yeovil, Somerset, BA20 2DP. Tel: Yeovil (0935) 76272, ext. 33 or 88.

Closing date: 27th April 1983

Programmers to make an immediate contribution N.W. England

With British Telecom's increasingly competitive stance in the marketplace, we are revising substantially many of the computing aspects of our business. We are now looking for specialists whose skills will make an immediate and valuable contribution to our operational effectiveness. We need a number of the following to join small teams working in Manchester, Liverpool, Preston, Lancaster and Blackburn.

IBM Systems Programmers Up to £11,725

To maintain operating systems hardware, with particular responsibility for setting up advanced operating systems including accounting data management, scheduling, storage management, security and input/output on a newly installed IBM 4300.

You should be aged 25-45 with at least 2 A-levels (appropriate degree or equivalent preferred), and should have 2 years' experience in IBM operating systems, e.g. DOS/CICS, VM/CMS; Micro Operating Systems (CPM/MPM); and

Programming Languages (particularly PL1). Starting salary will be within the range £7,498 - £11,725, depending on age, qualifications and experience, rising to a maximum of £13,926.

Applications Programmers Up to £8,603

To develop end-user software for non-engineering systems. Aged 20-45, you will need, as well as A-levels, at least 2 years' experience in basic computing skills which should include programming (PL1, MASMIC and COBOL); database utilisation particularly RAMIS; and the use of packages available as programming aids.

Starting salary will be within the range £5,046 - £8,603, rising to a maximum of £11,725.

For further information and an application form, ask the Operator for FREEPHONE 6014, or write to Mrs J. McCallin, Personnel Officer, P1242, British Telecom, 91 London Road, Manchester M60 1HQ.



Can you persuade DP Management to see VME your way?

We are looking for a Consultant Lecturer with VME 2900 or VME B field implementation experience, who has the maturity and technical awareness to present courses to high level Data Processing Management, often in a pre-sales situation, and who will be able to take total responsibility for the support of courses in the vital area of training for DP Management of VME operating systems.

You would be a member of the Large Systems Implementation Unit of ICL's Professional and Executive Training Sector, based at Beaumont, our Berkshire training centre near Windsor.

Although based mainly at Beaumont, you will be presenting courses at Hedor Park, ICL's prestigious management training centre near Maidenhead, and at customer locations throughout the UK and overseas.

The Large Systems Implementation Unit is also responsible for providing both potential and existing users with training on the use of our networked product line and you would be expected to contribute to and become

involved in this fast moving and interesting area. As customers move to VME this prestigious area of training offers great challenge, satisfaction and career prospects.

We will train you in professional presentation techniques. If you have got the confidence, credibility and enthusiasm to communicate your experience of VME to others, telephone Angela Hoggan, Manager-Large Systems Implementation Unit or Michele Barons, Personnel Officer on Windsor (07535) 68181 or write to them at International Computers Limited, Beaumont, Old Windsor, Berks SL4 2JP.



Sales/Support

— Exciting New Venture —

Backed by one of the World's leading electronics organisations, our client is poised to launch a new generation of small business systems with excellent networking capabilities.

The initial business plan is based on the selection of first-class distribution outlets and software sources which has led to their urgent requirement for the following key personnel.

SALES EXECUTIVE c £20K + Car + Benefits
Requiring a highly successful track record with one of the major small business system manufacturers or dealers, your sales experience must be augmented by a fair understanding of accounting systems, stock control or similar applications. The role will involve the sourcing, selection and account management of regional distributors and software/systems houses throughout the UK. A sound knowledge of at least one vertical market would be advantageous.

SOFTWARE SUPPORT c £15K + Car + Benefits
With at least five years' experience in the computer industry, your experience must cover operating systems (Unix preferred) and applications software. You will use this expertise fully in liaising with software houses and customers for the provision of a high level of pre-sales technical support. Experience of training sales engineers would be useful.

For full details of this exciting new venture please telephone Ken Allwright on Maidenhead (0628) 74274 or write in confidence to Charvil Lewis International, 27 Marlow Road, Maidenhead, Berkshire.

Charvil Lewis INTERNATIONAL

Logistix Logistix Recruitment Limited
10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

Signal Processing

London & S. Home Counties: Salaries to £12K

Our Client, one of the leading U.K. Systems and Software Houses, has a number of vacancies for Signal Processing Specialists to join either its Central London- or Surrey-based offices. Applicants should be graduates in a scientific discipline and have subsequently gained at least two years' experience in an industrial environment, developing software for signal processing applications. It will be of considerable advantage to have had exposure to High Speed Array Processors with speeds of up to 100M floating point operations per second. As well as possessing the technical skills outlined above successful candidates will also be expected to be personally presentable as there is a significant degree of client contact. Ref: L/14/A

Comms Consultants

Italy: Salaries to £17K + Overseas Allowance

An International Systems House and Consultancy urgently requires Communications Consultants and Senior Communications Consultants for permanent career positions in Italy. Suitable candidates should be 26-36 years and be educated to degree standard. You will be expected to have a thorough knowledge of at least two of the following:- message or packet switching, communications prototyping techniques (X-25, SDLC, HDLC) or office automation and networking systems. Experience within the banking industry would be a distinct advantage, particularly for the senior positions. Fluency in Italian is not essential as English is predominantly spoken within the working environment. Ref: L/14/B

Knowledge Engineering Language Development

Thames Valley: Salaries to £15K

PROFILE: SPL International established its Research Centre in 1978 in Abingdon, Oxfordshire and has recently taken additional premises in the Reading area. The Centre plays a significant role in the application of artificial intelligence techniques to industry's requirements and, additionally, is in the forefront of compiler technology for such languages as CHILL, ADA and RTL/2.

PERSONNEL: As part of its planned expansion, the Research Centre is seeking Systems Programmers, Designers and Consultants. All candidates, preferably aged 21-35 years must hold a minimum of B.Sc. degree in a numerate subject and offer relevant experience of at least 12 months. Candidates with an M.Sc. or Ph.D. are encouraged to apply if they can combine an academic background with some industrial and commercial exposure. The Company's specialist areas of activity demand that all potential employees have an in-depth knowledge gained as a Programmer or Systems Engineer of two or more of the following:- artificial intelligence, cybernetics, knowledge engineering, robotics, process and control engineering, the development and optimisation of compilers for CHILL, ADA, PROLOG or other high level languages. **GENERAL:** Certain positions will entail a degree of national and European travel and all candidates must be prepared to contemplate travel as a necessary job requirement. Salaries reflect the importance which S.P.L. places on the recruitment of these personnel. Local housing costs are comparatively modest, whilst the Company will meet significant relocation costs. In addition, a comprehensive range of ancillary benefits is available. Interviews will be held on the Company's premises throughout April. Ref: L/14/C

Office Automation Systems

London & W. Home Counties: Salaries to £12K

Applications are invited from Systems Designers who wish to enter the fast-moving market of Office Automation and Viewdata systems. Our clients are one of the leading names in this area and their newly established Research and Development facility has a number of vacancies in the following technical fields: data and telecommunications systems software design; I/O drivers design; screen editor design and terminal emulation. Whilst it would be advantageous to have gained experience in any of the above, our clients are primarily concerned with general, real-time systems exposure preferably gained on DEC PDP-11 or Modcomp mini-computers. Language skills should include fluency in Fortran, Assembler and high-level, block structured language such as Pascal. Ref: L/14/D

Operational Analysts

London: Salary to £13.5K

A number of Operational Analysts are required by this London-based Consultancy. Academically, you should hold at least a first- or second-class B.Sc. Degree in Mathematics, Physics or Statistics, An M.Sc. or Ph.D. in Operational Research is a distinct advantage and will certainly reflect in the salary offered. Past work experience should include one or more of the following areas:- war gaming and scenario studies, mathematical programming and analytical modelling, navigation systems assessments, reliability studies and data reduction. An important feature of these positions is the ability to communicate software and C.R. techniques to non-technically minded personnel. There will also be a degree of travel to clients' sites. Ref: L/14/E

Networking Systems

Thames Valley: Salaries to £14K

A small Systems and Software House, specialising in the development of networking products for the Banking and Defence industries, is currently seeking to recruit additional Junior Programmers and Senior Designers. Suitable candidates will be numerate graduates who have current or very recent experience in a multi-processor environment. It is essential that you offer fluency in a block-structured language with 'C' or PASCAL being the most desirable. Applicants who have software and/or systems design experience with proprietary networking product such as SNA or DECNET will be of particular interest. However, recent graduates who demonstrate ability and enthusiasm will be offered excellent in-house training. A degree of mobility is essential as there will be short-term visits to E.E.C. countries. Ref: L/14/F

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204/100 1/10

Our vacancies stay sharp to the bottom of the page.

FREELANCE OPPORTUNITIES

SOUTHERN
0252 516141

ADF Programmers
BURROUGHS 6800/6700 Analyst/Programmers
CIS COBOL Programmers
CORAL 86 Programmers
DATAPoint Database Programmer/Analyst
DEC RSTS/E BASIC + 2
DEC RSX CORAL Assembler
DG RDO5 Business Basic Programmers
Hardware/Software Engineers
Honeywell DPS4 RPG II
HP3000 IMAGE COBOL QUIZ, QUICK
IBM Assembler with PL/I Analyst/Programmers
IBM DOS VSE CICS Chief Programmer
IBM DATABASE Administrator with IMS DB/DC
IBM SYSTEM Programmers
IBM 8100 DPCX or DPPX
IBM PL/I, IMS DB/DC
IBM OS COBOL Programmers
IBM COBOL with IMS DB/DC, some with ADF
IBM COBOL CICS/DLI, JSP
IBM DLI CICS CICS
IBM MANTIS Programmers
IBM NOMAD
IBM PL/I CICS DLI
IBM Series 1 RPS, MTM
IBM SYSTEM 38 RPG III
IBM DATA MANAGER EXPERIENCE
ICL IMS Systems Prog./Designer
ICL DDS Analyst
ICL LISP Programmers
ICL CORAL and COBOL Programmer/Analysts
ICL COMMS Programmers with PROTOCOL experience
ICL COBOL with TPMS or MTS
ICL ME28 TME RANGE COBOL
ICL SYSTEM 25 Designer and Programmers
ICL VMEB Analysts with IMS
ICL VMEB COBOL Programmers, some with IMS
ICL 2800 VME Technical Support, all levels
ICL 2800 with TOTAL
ICL OMAC 28 IMS
INTEL 8086 Programmers
INTERGRAPH AND GRAPHICS
JCL Manager Expertise
MICHAEL JACKSON structured programming
techniques with COBOL
MICRO BASIC Programmers
TANDEM Programmers
Technical Author with DEC ASSEMBLER
Telecoms Consultant
T1990 DX10 COBOL Programmers
UNIPAY Programmers

VAX, BASIC, COBOL or FORTRAN
VAX VMS CORAL 86 and INTEL 8086
VAX SYSTEL expertise

Contact: STEVE WHITING, STEVE CASEY, PETER HOLLIDAY,
CHRIS WHETHERLEY, DAVE LONKHURST, DEREK WADHAM,
SANDRA CAREY or EILEEN CARMICHAEL

MIDLANDS & NORTH
021-742 4431

DEC PDP RSX CORAL
HP3000 IMAGE VIEW QUERY RAPID
IBM/ICL COBOL plus DB, all levels
IBM 8100 DPPX
IBM Assembler CICS Programmers
IBM IMS DB/DC
IBM COBOL CICS DLI Programmers
IBM DOS/VSE Systems Programmer
ICL VMEB IDMS and/or TPMS
ICL VME 2900 Programmers
CIS COBOL Programmers
ICL ME28 TME Programmers
ICL DRS 20, all levels
UNIVAC DMS 1100 Technicians
IBM PL/I CICS DLI Programmers
Manufacturing Analysts with Mainframe or Mini experience
PERMANENT Senior Operators with MVS, c. £8K,
for Birmingham
UNIVAC 1100 Database Administrators
UNIVAC 1100 Analysts/Programmers
Contact: NEIL SMITH, DAVE PARKER or KAREN LONGCROFT

OPERATORS
0252 516141

ICL VMEB or GII Shift Leader
ICL GII and VMEB Operators
ICL 2804 Executive Operators
ICL VMEB Network Operator
HONEYWELL LG DPS8 Operators
IBM 8100 DOS/F Operators
IBM 4341 OS/MVS, JES 2, TSO with good JCL
PERMANENT Operators with IBM 4341 OS/VS1 and
MVS JES 3 for Midlands
PERMANENT IBM Data Controller for MVS env.
with good JCL, Hants.
Contact: ALAN PAINE or CHRIS MAGEE

OVERSEAS
0252 516141

SAUDI ARABIA
Contact: BILL EVANS

12 months' + assignments April, May, June
Analysts with IMS and commercial systems experience
Analyst/Programmers - PL/I preferably with COBOL, TSO,
SFP, MVS experience
Programmers - Mark IV, ADF, APL, SAS or FOCUS experience
Systems Programmers - IMS DB/DC, VTAM, MCP, MSNF or
HSM, MSS 3580 and DASD management experience

HOLLAND

Contact: BILL EVANS or BILL TORBITT
6 months' + assignments commencing April, May
Programmer/Analysts - APL-MABRA experience
Programmer/Analysts - IBM 8100 experience

USA

Urgent requirements for Programmers in Chicago,
Philadelphia, Baltimore; excellent package
Expertise required
IBM COBOL with IMS or DLI
IBM COBOL CICS/DLI
IBM COBOL with PL/I
IBM System 38 with RPG III
IBM 8100 DPPX COBOL
ICL or IBM COBOL with IDMS
IBM COBOL with Adabas
IBM COBOL with any on-line or Database experience
Experience of other mainframes/languages are also in demand
in America. If you are genuinely interested in a contract in the
USA contact: STEVE WHITING

PERMANENT
0252 516141

Programmer/Analyst with mini COBOL and experience of soft-
ware tools, Surrey, c. £8.5K
Analyst/Programmers with strong COBOL for Midsx., c. £12K
Project Leader-Senior Analyst/Programmer with COBOL and
accounting systems experience, Berks., to £12K
Senior Programmers and Programmers with ICL COBOL,
preferably with VME experience, Hants., c. £9.5K
Operations Manager with IBM GSD background, Surrey,
c. £9.5K

Contact: PETER JEZEPEH or FRED BRAMLEY for an immediate
confidential interview or write, enclosing a detailed C.V.



TRIDENT COMPUTER SERVICES

WE CARE FOR OUR CONTRACTORS

THE PARADE,
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2115 COVENTRY ROAD,
SHELDON,
BIRMINGHAM B26 1BR
Tel: 021-742 4431. Telex: 336879

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Not since the days of Florence Nightingale
has the Nursing Profession undergone
such a change



UNITED KINGDOM CENTRAL COUNCIL
for Nursing, Midwifery and Health Visiting

After more than a century of development and change, nursing,
midwifery and health visits are joining together to form new
statutory bodies with responsibility for one of the largest
professions in the UK.

With the creation of a United Kingdom Central Council and
the National Boards of England, Scotland, Wales and
Northern Ireland, comes a major new information processing
project to replace systems currently in use for keeping professional records for individuals.
Computerisation will also be utilised for the statutory bodies in the areas of financial information,
statistical analysis and central processing of applications for training places.

Computing power is considerable, the hardware utilised will be an IBM 3083B (16 megabyte) and a
NAS 240H (8 megabyte). The software environment is MVS operating under VM and COBOL is the main
language. Adabas provides the database management software and NATURAL is also used. The database is
on-line using the COM-LETE TP monitor via VDU's from the four national capitals.

SENIOR SYSTEMS ANALYSTS to 14K

The Senior Analyst position is critical in terms of defining and quantifying requirements identified by the
Senior computing management. He or she will be able to demonstrate proven ability in project control
and man-management. It would also be of considerable importance to have some fundamental
programming knowledge or experience and to be able to communicate and present ideas and technical
information effectively in user areas. The person will be expected to control, manage and motivate more
junior systems staff particularly analyst programmers within the database environment, and play an active
role in data policy and depute for the Database Administrator where appropriate.

This permanent position offers an ideal opportunity for unique experience because the project is in its
early stages, and will be one of the largest ever undertaken in this field. We would also consider
employing a professional for this role on a contract basis for the duration of the
development stage (12-15 months).

ASSISTANT DATABASE ADMINISTRATOR to 10K

This is an excellent opportunity to use your database skills within this new division, and gain valuable
experience in all areas of database management.

A background of three years or more in data processing is essential, preferably from a
programming environment, with practical knowledge of database theory. Good communicative
skills coupled with the ability to deal with all levels of management and users, is of prime
importance. A degree or education to degree level is a definite advantage.

The successful candidate will hold a responsible position within this highly professional team and
assist the D.B.A. in all areas to build and validate logical
data models to specific requirements.

To discuss these positions in more detail,
please telephone Janet Chilvers on
01-734 7394 during working hours or on
01-359 4997 evenings and weekends.

**WARWICK
WOODWARD**
A SPAN GROUP COMPANY
43-44 GREAT WINDMILL STREET, LONDON W1V 7PA
TELEPHONE: 01-734 7394 24 HOUR ANSWERPHONE

SYSTEMS ANALYST/PROGRAMMER

COMMERCIAL SYSTEMS PROJECT DESIGN AND DEVELOPMENT IN DUBAI, U.A.E.

One of the largest and most successful trading groups in
the United Arab Emirates is looking for an experienced
Systems Analyst whose main tasks will be:

- 1) Modify existing accounting procedures and reports to
smooth the computerisation process.
- 2) To communicate with clients and suppliers on one side
and Company Management on the other.
- 3) Helping systems design, development and implemen-
tation.
- 4) Helping trading company personnel to appreciate
computer usage and benefits.

This is a Key Job carrying considerable responsibility for
System Development and Project Leadership.
Ideally a degree + four years' minimum experience in
Programming, Systems Analysis and Data Processing
within a commercial environment and good communica-
tion ability, would be needed. Arabic knowledge is essen-
tial.

Also needed two Programmer/Analysts with three years'
minimum experience for the same project. Arabic
knowledge is not essential.
Salary will be negotiable depending on experience and
background and will include accommodation and a car.

Please contact or send full C.V.
for the attention:
Miss J. Slater
STERNOS LTD.
244 Kensington High Street W14

Senior Analyst/ Programmer (User Services)

Co-ordination of user services for staff, students and adminis-
tration, including information, documentation and program
advisory service, combined with involvement in current pro-
gramming projects. Hardware currently includes 4 large
PRIME computers and 45+ CP/M micros.

Salary Scale: £9,504-£19,563
Further particulars and application form from:
Establishment Clerk,
The Polytechnic, Wolverhampton, WV1 1SB

UNIVERSITY OF WARWICK LECTURESHIP IN INFORMATION SYSTEMS/BUSINESS COMPUTERS

Applications are invited for a post of Lecturer in Information
Systems/Business Computers in the School of Industrial and
Business Studies.

The successful candidate will teach on undergraduate and post-
graduate courses, designed for future managers and staff advi-
sors so as to enable them to understand and benefit from mod-
ern computer developments relating to information and
decision support systems. Candidates should have research
experience as well as an understanding of the problems of
obtaining effective use of computers within organisations. Initial
salary up to £8,510 p.a. on the Lecturer scale: £8,276-£13,505
p.a.

Application forms and further particulars may be obtained from
the Academic Registrar, University of Warwick, Coventry CV4
7AL, quoting Ref. No: 36/A/S2/8. Closing date for receipt of
applications is 28th April 1983.

INTER-COM

SNR. ANALYST PROGRAMMER £12,500 + Benefits

Major profitable UK concern with superb offices in the heart of SURREY currently seek two IBM COBOL Analyst
Programmers with experience of VTAM, IDMS, CICS TSO/VS/9. First class communicative skills are needed as well as
exp. team leadership. Excellent benefits include Annual Bonus.

PLI DEVELOPMENT c. £11,000

Leading London based company has urgent requirements for Senior Programmers who will ideally have three years'
commercial programming exp. using PL/I on-line and database techniques. Company retain IBM 3083, 4341 & 2 running
under MVS using CICS DLI, IMS. Call now for more details.

JUNIOR COBOL To £8,500

18 months' COBOL programming experience plus a genuine desire to progress eventually into Analysts in all their
work areas. We have a commercial organisation based Midsx/Surrey borders.
Company retain IBM hardware + minis. Excellent benefits.

IBM BANKING SOUTH WEST

Major Banking Group require IBM COBOL or PL/I programmer/analysts with experience of IMS DB/DC, Jackson
structured programming techniques, Assembler advantageous. Salary £12,500-£19,500. Systems Analysts, financial
systems oriented - working on International Banking Projects. Salary £12,500-£14,000. All positions offer normal
banking benefits including mortgage.

JUNIOR SYSTEMS ANALYSTS c. £10,000

Due to continued expansion a number of our London based clients seek Systems Analysts, minimum one year's
experience. Programming background needed along with excellent communicative skills as there is considerable user
contact. Develop new projects from feasibility to implementation. Exp. of an on-line/database environment definite
advantage. Excellent benefits normally associated with large companies.

SUITE 6, SOUTH BANK HOUSE, BLACK PRINCE ROAD, LONDON SE1
TELEPHONE: 01-735 8171. TELEX 295555 LSPG

Agcy No. SE 7012

CALL 735 8171 Ext. 137
or 145

Suite 6
South Bank House
Black Prince Rd
London SE1

D.P. OPPORTUNITIES UP TO £9,000 – LEEDS

Major development of existing D.P. facility

We are the fourth largest Building Society with a large and well established D.P. department based at our Leeds Head Office. The Society has a major investment in on-line systems both within Head Office departments and for its branch network where there is an active programme to introduce counter-top terminals. These systems are supported by two IBM 3031 CPUs running under the MVS operating system with CICS.

An ambitious development programme has been identified for the next five years in order to provide the Society with advanced marketing and management information systems. In order to support this programme several new software components and techniques are being introduced including database and Very High Level Languages.

To help the Society with these developments we require:

PROGRAMMERS AND ANALYST/PROGRAMMERS

We are looking for D.P. professionals with a good IBM background and substantial experience of Cobol. Knowledge of Assembler will be useful. It is doubtful whether someone with less than 3 years industrial/commercial D.P. experience will meet our requirements.

BENEFITS

With the wide range of design and development projects that are currently underway and planned for the future we can offer excellent scope for career progression, with a unique opportunity to be involved in the design of advanced systems.

Salaries are progressive and competitive. Additionally, the Society offers a STAFF MORTGAGE SCHEME, pension, life assurance and other benefits.

Interested applicants should telephone Leeds 438181, Ext. 2373 for an application form and vacancy specification quoting reference number C.W. 7/4 or write to:

Mr. J. Clark MBIM,
Personnel Manager,
Leeds Permanent Building
Society, Permanent House,
The Headrow, Leeds LS1 1NS.
Closing date for applications is:
22nd April 1983.

Enquiries will be treated in the strictest
confidence. Envelopes should be marked
'Staff-Confidential'.

**the
Leeds
PERMANENT
BUILDING SOCIETY**

in Waltham Forest

you can see the wood for the trees



5 COBOL PROGRAMMERS

to £8,000
+ benefits

This progressive London Borough

comprising Walthamstow, Leyton and Chingford areas is situated in the North-East of London and borders Epping Forest. The area is predominantly residential with belts of industry interspersed. There are excellent facilities for shopping, recreation and education. The borough is well served by public transport, and Walthamstow Central Station is the Northern Terminus for the Victoria Line.

Live locally – the rates are going down this year – or commute from a village or small town in the nearby Essex countryside. Free car parking for employees is provided.

The Data Processing Department use a 4 mb 2956 with VME and TPMS. Systems development and integration are achieved by extensive use of DDS and IDMS. Committed terminal users, they have both 7500 and DRS screens and a sophisticated Rediffusion key-to-disk system. The role to be played by distributed and networked micros in future developments will be extensive.

The Systems Development Manager is looking for five additional programmers to join his highly professional team. He wants 'self-starters' who are happy to use their initiative and do not need constant supervision.

The Job

offers excellent training and career opportunities for those who wish to consolidate their position in a professional environment where individuals matter. Successful candidates will be required to construct, develop, document, test and implement computer programs which provide the processing facilities defined in relevant specifications. Programmers are assigned to Project Teams which are managed by a Principal Systems Analyst and supported by Senior Programmers advising on technical and design considerations.

The Candidates

will be professional, highly-motivated people who enjoy working in a progressive Data Processing environment where job satisfaction and career progression of the individual are given high priority. Sound ICL COBOL experience and an understanding of structured programming techniques is essential. A knowledge of Jackson Methodology would be advantageous, and candidates combining this with practical experience of DDS/IDMS programming in a VME environment will be of particular interest.

Find out more

Contact us quoting Ref. LB1R for comprehensive job specification, benefits package, application form, or any additional information you require.

EiGER
Management Limited
77 Wollaton Road, Croydon CR9 2AJ
01-681 7748/2141

An ethical service from practising computing consultants

SALES and SUPPORT

BIRMINGHAM/MANCHESTER DEC based systems

Our Client is one of the largest and the most consistently successful computer services companies with an unequalled reputation for quality, innovation and growth. Their products and services cover almost every aspect of computing and information technology. The large customer base which includes industrial, financial, government, education and professional organisations has been built on the concept of providing solutions to business problems and is supported from offices in the UK and several overseas locations including the USA. In order to satisfy the company's next phase of expansion we have been retained to recruit professional sales and support personnel for their Northern region. These positions offer tremendous potential and carry all the normal benefits associated with a multi-national company.

TURNKEY SALES EXEC.

B'ham/M'chester

Sal.Neg. G'tee to £18K

You will probably be in your early thirties, with a sensible mix of sales and systems experience. Knowledge of DEC hardware and software is essential. IBM and/or ICL appreciation would be an advantage. This position requires an ability to develop proposals for business solutions and to sell these proposals to senior management, backed by a team of experienced professionals. The successful candidate will already have a good track record in sales and must be a self-starter. There is a choice of car and the successful candidate can expect to earn in excess of £25K per annum.

TECHNICAL SUPPORT (VAX/PDP)

B'ham

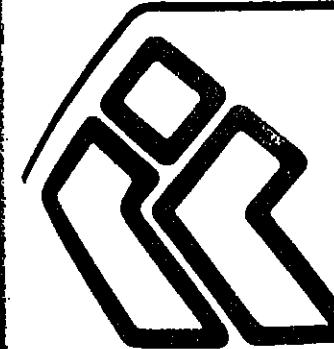
c £10-13K

The successful candidate will be a well qualified software professional with at least 3 years' experience of RSTS and VMS and/or RSX together with sound telecomms and networking knowledge. He/She should be self motivated, possess excellent communicative skills and be used to operating in both the pre-sales and implementation areas. The highly attractive salary is backed by a valuable range of benefits and the prospects within the organisation are outstanding.

Please send full CV to:

Vic Chivers,
SEARCH DYNAMICS LIMITED
Edgbaston House, 3 Duchess Place,
Hagley Road, BIRMINGHAM B16 8NH
Telephone: 021-455 7811

Search Dynamics
Manpower Advisers



intercity
consultants

International house, world trade centre, London E1 9UN 01-488 9701 telex 884871
37 York Place, Leeds LS1 2ED tel: 0532 431811

DIRECTORSHIP/CONTRACT SALES

We are a rapidly expanding computer consultancy specialising in systems and programming contract support to client companies.

As an overall part of our business plan we are now seeking an experienced consultant with proven success in the London and Home Counties area.

The person that we are seeking will be able to demonstrate the following qualities.

- ★ Total commitment and tenacity.
- ★ Strong communication and interpersonal skills.
- ★ Ability to work as part of a team.

Individuals who can meet this specification can expect substantial profit related earnings and will be expected to take a shareholding in the Company.

Replies to be addressed to:

The Managing Director (London Office)

CONTRACTS

A selection of our existing contract requirements are listed below. Many are ideal for 'first-time' contractors, offering long periods of employment and high rates of pay.

MINIS	Scotland
HP 1000 - Fortran OR Pascal	Scotland
HP 3000 - Fortran - Graphics	Scotland, NW & H. Counties
HP 3000 - Cobol, Image, View, Query	Berks
PDP - VAX VMS Systems Programmer	11. Counties
PDP - VAX 11/780 - Cobol	London
PDP - Aims	11. Counties, NW
R/T - Corel06 - Defence	11. Counties, NW
Parsons Argus - Corel	London
IBM 8100 - Cobol - Dppx	11. Counties, NE
ICL ME20 - Cobol - Idms/Tpms	11. Counties, NE
Systems Engineers - Defence Systems	London
Systems Engineers - TTI Logic	
MAINFRAMES	11. Counties, NE, NW
ICL 2800 - Cobol - Idms	11. Counties, NE, NW
ICL 2800 - Idms - Analyst	Berks
ICL 2800 - Cobol - Idms/Tpms	11. Counties, NE, NW
IBM - Cobol - Cics and/or DL1	London
IBM - Ims - Adr - Systems Designers	NW
IBM - Fortran - Vm/cms	NE
IBM - Natural - Adabas	11. Counties
Burroughs 6500 - Cobol - Dms2	

For further information please telephone our London office or return our coupon or your C.V. to: Intercity Consultants, FREEPOST, World Trade Centre, London E1 9BR.

I am interested in contract work
Name: _____
Address: _____
Works Tel: _____
Home Tel: _____
Hardware: _____
Software: _____

20/1/83

UNIX

In Consultancy

£8,000-£15,000 Central London

— in commerce
— in industry
— in CAD/CAM
— in manufacturing
— in finance

INEVITABLE

Developed originally in 1969 as a research tool, UNIX is poised to become one of the most popular and widely implemented operating systems in existence. Designed as a multi-user/multi-tasking system, its main attraction is a high degree of portability enabling implementation on a wide variety of microprocessors and consequently on the majority of today's 16 and 32 bit hardware. In short UNIX is destined to make the greatest impact on computer software technology for years.

As Europe's leading supplier of UNIX related products, we have formed a highly skilled team of Software Specialists enabling us to capitalise on the rapidly expanding Commercial, Industrial and Office Automation markets. Our success has created a number of opportunities for Systems Programmers and Software Engineers with operating system or microprocessor development experience to join our team.

Whatever your knowledge, involvement or indeed interest in UNIX, this environment will accommodate your short, medium and long term technical career ambitions. If you want to become involved in the evolution of a product that has already captured the attention and imagination of computer manufacturers and users throughout the world, then we would like to talk with you.

To find out more and to arrange an initial interview please contact our Advising Consultant Steve Stark on 01 935 0671 (24 hour answering service). Alternatively submit a copy of your C.V. to him at the London address below.

Technical Sales & Management Appointments

(0191)

Specialist Computer Recruitment Ltd

SOUTH
James House, 46 James Street,
London W1M 5HS
01-935 0671/486 0461

MIDLANDS & INTERNATIONAL
35-37 Great Charles Street,
Queensway, Birmingham B3 3JY
021-236 3781

NORTH
International House, 84 Deansgate,
Manchester M3 2ER
061-633 0427

BELGIUM
Avenue Louise 327,
Boite 4, 1050 Bruxelles
010 322-640 715/171

HOLLAND
Willemsparkweg 92,
1071 H.M. Amsterdam
010 3120-760947

Top calibre Analysts & Programmers

West London

Up to £12K+ bonus

Our client, one of the fastest growing multinationals in the FORTUNE list of the top 500 companies, is a minicomputer manufacturer with a public commitment to continuing expansion which includes the provision of top quality turnkey services. To this end an independent systems division has been set-up in the UK with European wide responsibilities to offer systems design, special purpose software, systems integration and other services to large corporations across a wide variety of commercial and technical applications.

Several more top flight analysts and programmers are required. A good working knowledge of COBOL, PL1 or Fortran is essential together with hands on experience of Transaction Processing systems or Real Time applications.

The ability to write program specifications will certainly be of interest and candidates for the more senior appointments must be able to demonstrate relevant systems design skills on commercial and/or technical applications.

These positions offer one of the most attractive

working environments in the industry including:-

- The opportunity to extend experience into completely new application areas.
- Positive encouragement to get hands on experience across the product range from micros to £1,000,000 super minis.
- A chance to acquire knowledge of new languages, operating systems and support aids.
- Outstanding opportunities for personal growth, particularly into project management.

The highly competitive remuneration package is complimented by a company car for the more senior appointments and will be earned by more junior staff, on promotion.

In the first instance contact Chris Denington on 01-631 4184 or write to: A & A Consultants (Holding) Ltd., County House, 10 Little Portland Street, London W1N 5DF.



(01301)

DP Manager

Wiltshire to £25K
A manufacturing company, part of a large multi-national group requires a manager with a strong IBM mainframe background and relevant applications experience. Personal qualities of poise, thrust and corporate understanding are looked for. Age: 30 to early 40s. Substantial benefits. Ref 631

Analysts
West Midlands to £10.5K

Manufacturing and distribution company needs analysts to help develop systems on large ICL mainframe with nationwide mini/micro network. ICL background essential. Manufacturing/wholesaling expertise is required. Knowledge of micros desirable. A programming background useful. Excellent benefits. Ref 659

IBM Programmers, A/Progs
Midlands, South, West £8.5-13.5K

Vacancies exist in IBM installations with manufacturing and financial services organisations at various levels of seniority. Cobol or PL1 experience should ideally be combined with at least one of CICS, DL1, Adabas, IDMS. Re-location assistance in most cases. Ref 117

HP - Permanent/Contract
South, West, Wales £ negotiable

Manufacturing, distribution and engineering companies require experienced Hewlett-Packard programmers and analyst programmers at varying levels of seniority. A minimum one year's experience of HP systems software is required. More senior positions call for hardware/software communications knowledge. Excellent permanent and contract opportunities. Ref 670

Write or telephone:
London West Computer Recruitment
Evergreen, Dauntsey, Chippenham,
Wiltshire SN15 4JA
Telephone: (0249) 891114

LWCR London West Computer Recruitment

IBM - Software Technicians
Herts £20K+

Senior technical specialists are required by well-established software product company developing and selling products to the IBM market. Required is in-depth knowledge of MVS and systems software including CICS and/or IMS, plus capacity planning, tuning and Performance Analysis experience. Ref 663

IBM Systems Programmers
Midlands, South, West to £15K+

Systems programmers with at least one year's experience are required by OS VS, MVS and DOS/VSE installations on the South Coast and at provincial centres in the Midlands and West Country. Environments include manufacturing, financial services, public utility and computer bureau operations. Ref 671

ICL Systems Programmers
Midlands, West, Wales £ negotiable

ICL VME or George III systems programmers and ME29 technical support staff are required by several organisations including public utilities, distribution companies and service organisations. IDMS and ICL tele-processing software experience will be advantageous. Ref 672

ICL Programmers, Designers
Midlands to £11K

Large distribution company requires staff at varying seniority levels to help develop systems on ICL ME29 machines. IDMS and TP knowledge essential for senior positions. A minimum six months of Cobol experience required for programming posts. Good prospects. Re-location assistance. Ref 669

Hardware Designers
Oxon, Wilts, London £ negotiable

Design engineers at all levels required by companies building micro-based products. Applications include networking, data communication control and office automation systems. Degree standard candidates with digital (and, preferably analogue) electronics knowledge should have experience in real time, process control or office d.p. systems development. Ref 673

Real Time Project Leaders
Wilts, Glos to £14K

Leading companies engaged in telecommunication product development, process control applications, and flight control systems development require team leaders of degree standard with low and high level real time language skills. Experience of DEC and Intel machines desirable. Attractive locations. Re-location assistance. Ref 613

Real Time Programmers
Wilts, Glos to £10.5K

Several large companies are seeking degree standard programmers with 2-3 years' experience. Familiarity with a real time high level language essential; knowledge of DEC and Intel machines desirable. Attractive locations. Excellent prospects. Re-location assistance. Ref 614

Real Time Programmers
Hants to £12K

Well-established systems house requires experienced real time programmers for work on government and defence projects. Knowledge of Coral 66 is essential. Candidates, preferably of degree status, should have minimum two years of recent relevant experience. Excellent prospects. Ref 666

ring SCOPE for a change....

PL/1 or ASSEMBLER PROGRAMMERS to £10,500 + Mortgage

City Essex
The high demand recently encountered for good PL/1 or ASSEMBLER programmers continues. For example, at the time of going to press we have 6 companies in Essex and the City who have asked us to recruit programmers for them with either PL/1 or ASSEMBLER experience. All 6 are major companies with offices set in rural surroundings or close to main line termini and offering important benefits such as mortgage subsidy and flexitime. To learn more about these opportunities contact us today.

ICL ANALYST/PROGRAMMER to £11,000 + Mortgage

City
We have been requested by a leading company, based in the City to find an Analyst/Programmer for them. The necessary qualities are upwards of two years COBOL experience, preferably on ICL equipment, although other mainframe experience will be considered. The work is interesting involving close user contact, and the benefits, in addition to a realistic salary, include first class sports and social facilities, subsidised restaurant, and mortgage assistance where appropriate.

ICL PROG/ANALYSTS to £10,250

Sussex/Kent/Surrey.
Recently, five more companies have registered vacancies with us for programmers with upwards of 18 months COBOL experience. The companies utilise either ICL mainframes or ME29's and offer good conditions of employment including on-going training. If you feel that your career is not being developed sufficiently, then we could well have the company who can offer you every encouragement to progress further.

SCOPE FOR ALL COMPUTER PERSONNEL
Above are just a small selection of current opportunities but this is only part of the picture - for we currently have on file vacancies covering the whole of the Home Counties and London, so no matter where you live, contact SCOPE for news of the plum positions, quoting Ref: DL67G.

RPG2 or RPG3 PROG/ANALYSTS to £11,500 + benefits

West London
An excellent opportunity occurs for a programmer with good RPG experience to join an international household name company based in West London. With the installation of an IBM System 38 and future expansion plans, the successful applicant can considerably advance their career prospects. As well as a good salary, the fringe benefits offered make this a job not to be missed.

HONEYWELL ANAL/PROGS to £10,500

West London/Middlesex
We have been retained by several companies in West London and Middlesex to find professional Honeywell analyst/programmers looking to expand their experience. The minimum requirement is for eighteen months COBOL gained on level 66 or level 6 hardware, although the vacancies are at varying levels and our clients would also be interested in people with considerably more experience. The excellent salaries offered together with fringe benefits make these extremely attractive positions.

IBM COBOL PROG WITH CICS OR DL/1 to £11,000

Sussex
A brand new installation, utilising IBM 4300 hardware has just been set up in a pleasant Sussex town. The datacentre will be providing services to a wide range of companies within our clients group. Consequently, the work will be both interesting and varied, and will make extensive use of CICS and DL/1 if you have upwards of two years IBM COBOL then this is the ideal move for you.

STOP PRE: S URGENT - IBM COBOL PROGS to £10,800

Croydon
Just as we are going to press, a major Croydon client has rung SCOPE to inform us of four superb openings for IBM COBOL programmers. If you have any IBM COBOL experience, just ring the number below or better still, why not pop in and see us during your lunch hour - we look forward to talking to you.

SCOPE

SCOPE PERSONNEL SERVICES LTD
19 Park Street,
Croydon, CR0 1YD.

01-680 5920

01-680 5920

SYSTEMS AND PROGRAMMING

COBOL/CICS LONDON To £9,500
Central London based insurance company housing IBM 4341s with DOS/VSE, COBOL and CICS requires a keen, enthusiastic programmer (preferably a graduate) with 12 months' COBOL/CICS experience to join their dynamic development team, working on a range of financial applications. They offer excellent benefits including subsidised mortgage, free lunches and flexitime. Ref. C 2368

DEC MUMPS LONDON To £11,500
Senior position with this City-based company for an analyst/programmer with around 4 years' DP experience, at least 2 years' analysis and experience of DEC MUMPS. You will be offered every chance to move into management, and work with a variety of machines in a stimulating environment. Ref. C 2129

BURROUGHS - COBOL To £10,500
My clients a major and successful household name, are currently seeking programmers and analyst/programmers with Burroughs mainframe experience and a bias toward commercial applications. You will be involved in development work of a very high standard, and be encouraged to advance into systems and program design. Based in Herts, the department is large yet the teams within it are close knit, and professional. Phone now for more details. Ref. A 1920

UNIVAC - COBOL To £10,000
My clients offer the chance for experienced UNIVAC 1100 programming staff to join an expanding organisation where their ability to develop advanced business systems will be rewarded. You will be trained in both database and insurance applications, whilst working in a real-time on-line environment, sited in the heart of Kent. Opportunities for progression are solid, and benefits include flexitime, sports and social club and mortgage subsidy where appropriate. Ref. A 1924

BUSINESS BASIC CENTRAL LONDON £9,000 neg.
With a minimum of 6 months' Business Basic experience on Data General equipment you could be joining this busy computer bureau serving a wide range of clients. Working as part of a small team, you will be expected to deal with users, develop and finally implement various systems. Ideal opportunity for an ambitious programmer to train in analysis. Ref. D 2319

IBM SYSTEM 38 To £10,000
Would you like to work for a small DP department that offers you plenty of income, variety and prospects? A dynamic commercial organisation based in N.W. London are seeking an IBM System 38/RPG III programmer, with the potential to move into analysis. They have just recently installed the IBM System 38 and will shortly be embarking on exciting new development projects. Ref. C 2248

IBM ANALYST/PROGRAMMER £10,000 - PERKS
A well-established financial concern have an urgent requirement for a competent analyst/programmer to take up a vital position within their DP department. You should have a minimum of 18 months' IBM COBOL or ASSEMBLER experience with exposure to either DL/I or CICS. If you have the ability to respond to a challenging environment and seek a rewarding career please ring for further details. Ref. G 2103

COBOL CENTRAL LONDON £9,500-£10,500 neg.
Major electrical concern based in Central London requires a competent analyst/programmer with Data General COBOL experience. You will be working as part of a small team who are responsible for designing, developing, maintaining and implementing programs. You should have a positive attitude to work and the ability to work unsupervised. Ref. D 2324

APPLICATIONS SUPPORT PROGRAMMER To £11,000
A well-established bureau based in the City has a requirement for an Applications Support Programmer, to support and maintain a variety of projects. The ideal candidate should have an IBM ASSEMBLER background with DOS/VSE, some CICS would be helpful, although training given where necessary. The position offers good prospects with the possibility to go into systems programming at a later date. Please ring for more details. Ref. G 2349

IBM COBOL BERKS To £9,000
Variety of interesting positions in the Berkshire area for programmers with at least 12 months' IBM COBOL experience gained within an MVS, DOS/VSE, or VM environment. Opportunity to gain on one and advance experience and further your career. Ref. C 4306

HONEYWELL - COBOL To £10,500
This Herts based manufacturing concern, housing both Honeywell 6000 and level 6, would like to meet programmers with a minimum of 12 months' relevant experience. Your employment would be mainly in a development capacity, dealing with applications such as distribution and inventory control. Payroll etc. This is an ideal opportunity for a young programmer to further his career and knowledge as many training courses are organised. Promotion prospects and remuneration is excellent. Ref. A 1709

RPG II/III LONDON HOME COUNTIES £7-£11,000
Superb opportunities have recently arisen for capable programmers and analyst/programmers, within finance and manufacturing, insurance, commercial and software house environments. If you can offer at least 18 months' RPG II or III on IBM GSD kit, please give me a call for further information on jobs and benefits available. Ref. GEN 42

IBM COBOL WEST LONDON £10,000
Existing position with this major world wide company running IBM 4341 with DOS/VSE, CICS and JCL. They seek a capable programmer with 2 years' IBM COBOL experience, some CICS and/or DL/I experience, although full training will be provided for an outstanding analyst and ability of development work in a friendly team environment. Ref. C 2342

IBM COBOL £8, £9,000
Are you a graduate? Do you have at least 12 months' IBM COBOL experience? If so, a major City Bank would like to hear from you. They have an IBM 4341 running under DOS/VSE with DL/I and CICS training provided where necessary. Here is your chance to take up a position that can offer real career prospects, a realistic salary, and a full banking package. Ref. G 1957

ANALYST/PROGRAMMER HERTS £9,000
An excellent opportunity exists with this Hertfordshire based company for an analyst/programmer, with a sound IBM COBOL background on commercial applications. The company currently retain an IBM 4331 and 4341 under MVS and DOS/VSE with DL/I, and CICS. The ideal candidate will be completely involved with the design and specification of programs. Good prospects are offered coupled with various company benefits. Ref. G 1820

ICL SYSTEM 10/25 SURREY FIVE FIGURES!!
Can you offer 2 1/2 years' experience working with ICL System 10/25 equipment, are you capable of developing new systems and working as an analyst/programmer? If so, then this major company involved in the travel industry would like to hear from you. You will be working on a variety of interesting applications, from stock control to reservations systems. Excellent perks including discount on holidays abroad! Ref. D 2231

COBOL ESSEX £8,000 neg.
Expanding insurance concern situated in Essex are currently seeking to recruit a capable programmer with around 2 years' COBOL experience to join their busy development team that is about to embark on a major new project. You will be utilising their NCR kit, on which they offer full training. Conditions are excellent, including an excellent salary and various company benefits. Ref. D 2352

DEC - BASIC KENT £9,000 neg.
International company housing DEC PDP and VAX equipment are currently seeking an analyst/programmer to help with the workload that major new systems has produced. You should have the capabilities to design and implement various packages, and the will to succeed. Excellent company benefits including subsidised restaurant and 5 weeks' holidays. Ref. D 2350

IBM COBOL ESSEX To £10,000
A large financial institution in Essex is currently looking for well-motivated programmers with a minimum of 18 months' IBM COBOL and with the potential to move into analysis. You will be a vital member of a team, working on stimulating projects from start to finish. CICS exp. would be a great asset although, more important a good IBM background. The company offer excellent benefits and working conditions. Ref. G 2354

RETRAIN - ANY COBOL! £NEG.
Are you a graduate COBOL programmer with between 1-4 years' experience? Then my clients, a multi-national London-based concern have an exciting opportunity for you! They are currently seeking an ambitious and versatile individual to retrain on to UNIVAC 1100 kit, whilst working on varied and involving applications, from sales to accounts. You will have ample opportunities to further your DP knowledge operating systems, company benefits are excellent and the salary will more than compensate for your experience. Ref. A 2072

SNR HONEYWELL - COBOL £NEG.
Can you offer a minimum of 3 years' DP experience, which includes an in-depth knowledge of Honeywell mainframes from the programming and hardware to the analysis side? If so, this central London based commercial organisation, with branches throughout the country would be interested in you. They house Honeywell 164/DPS2 kit including TDS and IDS III, and are currently developing new, interesting systems using State of the Art technology. The company offer serious prospects for steady advancement together with an excellent benefits package. Ref. A 2296

ANALYST/PROGRAMMER N. LONDON/HERTS To £12,000
Interesting position with this financial company for an experienced analyst/programmer to work on both development and package tailoring. RPLS on IBM System 38 essential 12 months' analysis, and be mature enough to have confidence with users at all levels. Any knowledge of finance or pension systems advantageous, as you will hold entire responsibility for this side of the business. Ref. C 2345

ICL COBOL CITY To £10,000
Professional firm based in the City of London is currently offering the opportunity for an ambitious programmer to join their busy team working with advanced systems. You should have a minimum of 2 years' ICL for a challenging job that can offer real career prospects, ask now for further details. Ref. D 2208

HEWLETT PACKARD - COBOL To £10,500
An opportunity to join a highly reputable, international manufacturing organisation as part of its advanced and successful DP department. You must have a minimum of 12 months' HP 3000 experience. Ideally you will have a knowledge of MAVE, VIEW and DUEHY. They seek people who are looking to advance their careers and offer the chance to work with new technology. The position offers a package that includes a salary, bonus, Bupa and relocation. If required to join the Bupa bonus scheme. Ref. A 1010

Programmer/Analyst

The Science and Engineering Research Council is currently reviewing its administrative computer requirements and expects to purchase a number of the Daresbury Laboratory's IBM 4341s. The Laboratory is seeking a programmer/analyst for the Applications Group of its Computer Systems and Electronics Division.

The Laboratory provides major facilities for scientific research undertaken by University research workers from this country and abroad. The computers at the Laboratory include NAS 7000, QEC 4000s, VAX and PDP 11s.

The successful applicant will assist in implementing the packages, in developing links between them and existing systems and in the provision of programming and database support.

The Applications Group supports a wide range of scientific and administrative databases on several different computers and opportunities to participate in these projects will arise.

Applicants (male or female), should have a good honours degree (or equivalent qualification) in an appropriate scientific discipline and a sound programming background. Experience in some aspect of database systems or package implementation, particularly on IBM computers, would be an advantage.

The appointment will be made at Scientific Officer or Higher Scientific Officer level depending on qualifications and experience. The salary ranges for SO/HSO are £2,482 - £7,389 and £2,840 - £8,126 per annum respectively.

There is a non-contributory superannuation scheme, a generous leave allowance and a flexible working hours scheme. Some assistance with expenses for house and purchase may be available.

CLOSING DATE: 28th March 1983
For further information please write to or telephone Dr. M. Elder on Warrington (0628) 86000 Ext 350. Application forms may be obtained from and should be returned quoting reference number DL/809 to:

The Personnel Officer
Science & Engineering
Research Council
Daresbury Laboratory
Chesham
Warrington
Cheshire WA1 4AD

(3142)

UNIVERSITY OF ESSEX Department of Electrical Engineering Science Lecturer in Software Validation/Specification related to Real-Time Systems

Applications are invited for a post (Salary scale £3,375-£5,100, in appointment from 1 October 1983) to support teaching in the MSc course in Telecommunications. This course which runs alongside other graduate courses in the telecommunications area has recently been recognised by the BSC for Information Technology conversion.

Candidates should have an Honours degree and experience (possibly gained in industry or research) in the design and development of real-time systems and protocols. The person appointed will be expected to contribute to the graduate Telecommunications course and to the undergraduate teaching, and will also participate in research in the telecommunications area. Teaching and research in the Department are extensively supported by British Telecom.

Further particulars may be obtained from the Registrar (tel. 0432/50001, University of Essex, Wivenhoe Park, Colchester CO4 3SQ) to whom applications (3 copies) including a curriculum vitae and the names and addresses of 2 referees, should be submitted by 6 May, 1983.

(3143)

Systems Designers Programmers - Guildford - to £12,000

Systems Technology develop software and systems engineered and packaged to the highest standards for use in non-stop applications and no-support environments. Applications include graphics, interactive terminal systems, communications networks and reservation systems. Our clients include major international corporations for whom developments are undertaken throughout the world.

We now seek additional staff to be based in our new office in the centre of Guildford.

You are probably in your mid twenties to early thirties with a good honours degree in computer science or closely related discipline and solid experience of designing and implementing complex technical or systems software. Experience with PDP 11/VAX operating systems is particularly relevant, as is fluency in Pascal, Fortran and at least one assembler. You will have gained working knowledge of the product ranges of a number of manufacturers, for example, Digital, Hewlett Packard, IBM, and Modcomp. Most importantly, you have a desire to succeed, the ability to deliver elegant solutions to challenging problems and a willingness to contribute your ideas and experience to a company that takes notice.

In return, we offer competitive salaries, an excellent working environment in one of the most pleasant towns in the south east, travel opportunities and the possibility of transfer to our European office based in the Hague.

Please write or phone
Jane Pittman
Systems Technology Ltd
Weymouth House
Millbrook
GUILDFORD GU1 3YA
Tel: (0483) 89933

(3140)

DEPUTY OPS MANAGER

around £10,000 pa

Herts/Essex

We are a successful retail organisation with a twin IBM 4341, VM/VSE, CICS, DL/I installation at our Waltham Cross headquarters situated on the Herts/Essex border.

A new IBM 3083 is on order and we plan to substantially increase our investment in communications and remote processors. There is a second data centre at our Northern Administration Office in Bolton. Our expansion plans have created a need for a Deputy Operations Manager to handle day to day events, make scheduling and shift resourcing decisions and provide management continuity in the running of computer systems.

You are probably a senior operator or shift leader at present with a sound understanding of the controls and procedures required to ensure a top quality service to computer users. Your experience will have been gained in an

IBM environment, preferably on a 4341 processor. You will be also familiar with the operational requirements of VM/VSE, CICS and DL/I.

As a key figure in the department, you will be making decisions which affect hundreds of people and it should come as no surprise that you may be also asked for decisions outside normal office hours.

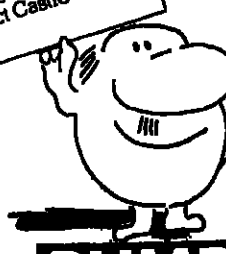
In addition to a competitive salary we offer a stimulating work environment, excellent career development prospects and a range of employee benefits which includes help with relocation costs where appropriate.

For further information on the company and on development plans please contact Gill Malone at Castle Recruitment. Daytime number (04427) 74841, Evenings and Weekends (04427) 2828.

Alternatively send your c.v. to her at: Castle Recruitment, ECL House, Park View Road, Berkhamsted, Herts, HP4 3EY.

RECRUITMENT 1983
This advertisement is one of a planned series to recruit a whole range of development and operations support staff during 1983. Our expansion plans mean real career opportunities for people who join us now.

If you feel that you can contribute in any of these positions in the future please contact Castle Recruitment on (04427) 74841.



RUMBELOWS

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(3131)

Real Time Specialists - Industrial - Scientific - Defence - - Technical -

£8K - £20K+

You have 3 years plus experience in one or more of the above stated areas and wish to broaden your horizons. Since 1975 we have specialised wholly in recruiting for clients who are active in those areas.

Opportunities are with Users, Manufacturers, Consultancies and Systems Houses, large and small.

Locations are: London, Home Counties and other parts of England, Scotland, and (if you speak German) some in Switzerland too.

Current requirements are for: Programmer/Analysts, Software Engineers and Designers, Project Leaders and Managers, Consultants, Systems Engineers, Group Managers.

At the junior and middle level we are particularly interested in those experienced in DEC PDP/11, VAX, Data General Mini's, Argus 700, Tandem, Intel, Motorola, Hewlett Packard, etc., using high and low level languages.

Most urgent requirements (like yesterday) are for Software Engineers using Intel 8000 series with experience of Data Acquisition or Process Control, and for Programmer/Analysts using PDP/11 or VAX who have worked on Communications, Industrial Control or Defence Systems.

Up to Managerial level:
Industrial: Process Control, Warehouse Systems, Robotics, Data Acquisition, Instrumentation, Communications (all forms of).

Scientific: Graphics Systems, Image Processing, Expert Systems, Geo Physics.

Defence: Command and Control (Air, Army or Naval), Radar Systems, Intelligence Systems, Simulation, MASCOB, Underwater Acoustics, Automotive Engineering, Hydro Dynamics, Man Machine Interfaces, Data Base.

Technical: Compilers, Operating Systems, Software Tools, Unix.

If you are educated to degree level and have good specialist experience telephone Beryl McLaren, 01-836 9719 or 01-836 9882 any hour of the 24 (week ends too) and you'll get a personal reply, not a recorded message.

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Up to 11-00pm each evening and weekends

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ANALYST/PROGRAMMERS COMMUNICATIONS to £16,000

An international software house has vacancies at several levels up to Project Manager status, for persons with good communications or message switching software experience. Our clients can offer the opportunity to be involved in the development and implementation of sophisticated systems based on the latest DEC equipment for a rapidly expanding client base and can reward appropriately.

ANALYST/PROGRAMMERS DEC/FORTRAN to £11,000 + CAR

One of the country's leading retail organisations based in Middlesex, utilising advanced systems on DEC PDP machines, is seeking 2 further Analyst/Programmers. 2-4 years' FORTRAN experience, gained in an RSX11 environment, is required for these rewarding positions. A fully comprehensive benefits package is offered which includes a company car for the senior position.

ANALYST/PROGRAMMER PDP & VAX to £11,000

This City based organisation with a multi DEC PDP system requires a further Analyst/Programmer to work on commercial and financial systems development with their new VAX equipment. They seek someone with 2 or more years' DEC BASIC gained either with RSTSE or VAX. Salary is fully negotiable and is complemented by a comprehensive benefits package.

SENIOR PROGRAMMER ICL COBOL to £9,500

Our client, a large financial concern, situated in Surrey requires an ICL COBOL programmer with 3-4 years' exp. and who is capable of leading a small team. Excellent prospects are available within their development programme, utilising 2900 equipment currently working under DME, but soon to move to a VME/B environment.

ANALYST/PROGRAMMERS PL1 to £11,000

Applicants should have at least 2 years' PL1 in a commercial/manufacturing background. The client is an established and progressive computer user with the DP centre based west of London. Not only should applicants have strong user skills they should also have good management potential since the client regards all successful candidates to become future managers. There is a full relocation package available.

ANALYST/PROGRAMMER RPGII/III to £10,000

International bank has identified a requirement for an Analyst/Programmer with a solid GSD background. The bank is converting from a System 3 to a System 38. Applicants should have at least 1 year's programming with some systems experience in a GSD background (RPGII) would be of special interest. As well as a good starting salary a standard banking benefits package applies.

ANALYST/PROGRAMMER RPGII/III to £9,500

Subsidiary of an international concern with a C. London base has a requirement for an Analyst/Programmer with at least 1 year's RPGII in a 34 environment. This is an ideal opportunity for a programmer to take on some analysis responsibilities since candidates do not have to have analysis experience. The department is fairly small and career prospects will be good.

ANALYST/PROGRAMMERS HP COBOL to £12,000

Two companies based in London utilising HP 3000 equipment require Analyst/Programmers to join their DP teams. Applicants should have 2-3 years' COBOL with some exposure to VAX systems and software. Both sites have fairly small departments but are expecting expansion in the near future. Perks are varied and include 6 weeks' holiday with one company.

PROGRAMMERS HP 3000 to £9,000

Surrey based installation requires a Programmer with around 18 months' COBOL to join their team. Knowledge of HP useful but not essential as training will be given. C. London/N.W. London based software house seeks Programmers with 1-2 years' experience of either SPL, FORTRAN, BASIC or PASCAL. Applicants can expect a good deal of client contact and must be professional in outlook and attitude. A variety of perks are offered including company car scheme.

PROGRAMMERS HP COBOL to £9,000

Company based West of London, a market leader in their field, requires 2 additional Programmers to join their teams. Applicants should have 2 years' COBOL gained in a commercial environment preferably with exposure to on line and data base systems. Knowledge of HP 3000 systems and software would be advantageous. This is a good opportunity to work on a variety of applications. Large company perks include 6 weeks' holiday.

(3171)

ENGLEDOWN ASSOCIATES
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LONDON

recruitment special

If you are recruiting computer professionals to work within the Greater London area, then Computer Weekly is the journal you need, because Computer Weekly gives you a higher circulation amongst the key job categories than our nearest weekly competitor. More Systems Analysts/Designers, More Programmers and More Operations staff.

The April 21 issue provides an added bonus with our special editorially supported feature, highlighting the range of career opportunities and prospects for computer professionals in this important computer centre. This is just one of many career-linked features to be published during 1983 aimed at helping readers improve their career prospects and at the same time provide the platform needed by recruitment advertisers when seeking staff.

Computer Weekly is Britain's leading computer journal both in terms of circulation and its dominance of the key job categories. Equally important is the preference computer people have for Computer Weekly over other journals in the market, a preference that has been repeatedly verified and documented in detail through independent research.

To reserve space in the Greater London Feature phone (01) 661 8080. Copy deadline is Monday, April 18.

Classified Department, Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS

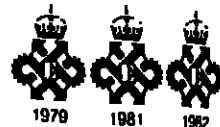
Office Systems Specialist

Cummins Engine Company is the world's largest independent manufacturer of diesel engines. There are various manufacturing locations and offices throughout the UK and at the Daventry facility we produce 900-1600 horsepower engines, the majority of which are exported. The company has increased its emphasis on providing more technological support in the form of electronic mail, word processing, personal computing etc.

To support this activity we wish to appoint an Office Systems Specialist with responsibility for providing central expertise in office technology, promoting its applications and ensuring compatibility among the UK locations. We are looking for a mature self-motivated individual who ideally would have experience in the following fields:

- Electronic Office Support Systems
 - Systems Analysis and Programming
 - Word Processing
 - Communications to IBM Equipment
- A reasonable amount of travel within the UK will be involved although the base will be Daventry.

We can offer excellent terms and conditions of employment. Relocation assistance will be available in approved cases.



For an application form, please write or telephone to: Mike Fearey, Personnel Manager, Cummins Engine Company Limited, Royce Oak Way South, Daventry, Northants NN11 5NU. Tel: Daventry 4400 extension 207.

(3184)

HP 3000

ANALYSTS and PROGRAMMERS

We require analysts and programmers with experience of HP 3000 and related software for a number of interesting and rewarding freelance assignments.

Should you be available now or in the near future then send a detailed c.v. or telephone me, Peter Moore, for an initial discussion.

P-E Computer Services Limited

Winchester House, Fountain Street, Manchester M2 2EF Telephone 061-228 2778



CONTRACTS

SENIOR PROGRAMMERS CENTRAL LONDON

ADABAS/NATURAL. Preferably with MARK IV and OS/MVS

Required early April and June. £426-£450 p.w.



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(3186)

UNIVERSITY OF SOUTHAMPTON

UNIVERSITY LIBRARY

A vacancy exists for a

Programmer

To join the Library Automation Group, responsible for designing, programming, implementing and maintaining computer-based systems used in the Library. A C.I.T. 8040, with 300 Mbit of disc store, and remote terminals, which include collection units, was installed in 1982. The Group is directed by a systems analyst and includes a senior programmer.

Applicants should possess a degree or equivalent qualification, a sound knowledge of COBOL or FORTRAN, and be experienced in the use of a computer. The successful candidate will be responsible for the day-to-day operation of the system, and for the maintenance of the system.

The appointment is for two years on the University salary scale, £2500-£3000 per annum. Applications (2 copies) giving details of qualifications and experience, together with the name and address of two referees, should be sent to: Mrs. E. C. P. Sear, Staffing Officer, University of Southampton, Southampton SO9 5NH. Closing date: 15th April 1983.

FOR CLASSIFIED ADVERTISING USE DIRECT LINES

RECRUITMENT CONSULTANTS (01) 661 8787

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EDP Systems-Orientated Auditor

Edinburgh Up to £13,000

Our client, a leading international firm of Chartered Accountants, wishes to keep abreast of developments in the ever advancing field of computer audit technology. Accordingly, applicants for the above position will be bright young qualified accountants with at least two years experience of audit in a computer environment. Age 25-35 years.

Varied and complex client assignments will test the abilities of the successful applicant, ensuring that he/she remains aware of all new system developments (supported by a comprehensive R. & D. budget). Other duties include the preparation of lectures, and planning of courses on computer auditing principles and techniques, for the benefit of both audit staff and clients.

This opportunity offers challenge, diversity and substantial reward in line with the commitment shown by the successful candidate.

Please write, in confidence, stating any companies in whom you do not wish your details forwarded, to:

C. Cole, Chief Executive, (Ref. C130).



Grant Forrest Recruitment

Pymms House, 375 West George Street, Glasgow, G2 4LW
Offices: Aberdeen and Edinburgh

MOTOROLA SEMICONDUCTORS STRATEGIC ENGINEERING

has opportunities for professional Engineers to apply their talents in the following areas:

• SOFTWARE ENGINEERS

with a sound knowledge of HLLs, 16/32 bit o/s and RT design - to work on strategic projects at chip, board and system level, associated with the 68000/68010/68020 MPUs and their peripheral devices.

• SOFTWARE/HARDWARE ENGINEERS

with similar background to the above, but with experience in the teaching field, to work on projects specifically related to the development of client education programmes.

• TRAINING ENGINEERS

for Northern Europe with knowledge and/or design experience with either both 8/16 bit product ranges.

Applicants, male or female, should be between 25 and 35 years of age, have 3 years' relevant experience, be qualified to HNC/Degree level and preferably have a second language as extensive European travel will be involved.

All positions, except Training Engineers, are based in Milton Keynes and carry an attractive salary/benefits package including relocation, if necessary.

Complete curriculum vitae should be sent to: Judi Lion, Motorola Ltd., 88 Tanners Drive, Blakelands, Milton Keynes, MK14 5BP.

(3138)



MOTOROLA
Semiconductor Sector

Experienced Programmer

Butterworths is one of the largest UK Book Publishing houses and specialises in legal, medical, scientific and technical books.

We are looking for a person particularly skilled in programming preferably someone who has seen a project through from basic design to implementation. The person appointed will join a small team which provides computing services to all departments of the Company.

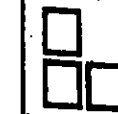
The systems currently in operation are order processing, subscriptions, sales ledger, nominal ledger and cost ledger. These are run on two large DEC PDP 11/70's. Most of the processing is interactive through some 60 VT100 terminals. The programming language is a sophisticated combination of COBOL and BASIC.

One of the 11/70's has spare capacity to accommodate new systems which are urgently required.

After a short period of familiarisation the successful applicant will be expected to work with minimum supervision on specific systems. This will include: specifying the system, program writing, documentation and training. The person must be able to work closely with the user during and after implementation to ensure that the system fulfils all the requirements as specified.

Please write giving full details of qualifications and experience to: The Personnel Officer

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(3178)

Support Analyst Programmers

Neg. to £12,000 plus car

We are a fast growing WAYS and HIREWELL Systems and Software House. Our specialty is commercial applications for part of turnkey systems with providing software consultancy skills to a large number of international corporations.

Due to a considerable increase in both UK and Overseas activities we now require Support Analyst Programmers of a variety of levels up to Project Leader.

If you are highly motivated, willing to accept immediate responsibility and can work happily alone or as part of a team then we could be right for you.

For people familiar with real time microcomputer systems using WMS BASIC, or HIREWELL LEVEL 6 COBOL, please write the opportunities are tremendous.

If you can demonstrate these qualities, please send your CV to Stuart R. Allen, Technical Director

ADS (Computers) Limited
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Tel. Slough (0753) 78167

(3138)

ADS

COUNTY TREASURER'S DEPARTMENT

The County Council with offices in Barnley have two 28884 MB ICL Computer Systems supporting considerable on-line, remote batch and conventional batch processing running under DME/G3 operating system. Work is currently in hand to introduce message routing software on the 7808FEP to give terminal access to both systems.

Applications are invited from suitably experienced persons for the following post:

SYSTEMS ANALYST

POST REF: T263

Grade AP4/5

Salary: £6,873-£8,325

Applicants should have wide technical experience preferably using data base techniques. The successful applicant will be involved in the development of a wide range of systems for all departments of the county council on both mainframe and mini-micro computers (whichever is the best medium).

The County Council operates a system of flexible working hours and payment of removal expenses, lodging and travelling allowances will be made in appropriate cases.

Please write for an application form, quoting the appropriate post reference to the Chief Executive (Personnel), South Yorkshire County Council, County Hall, Barnley S70 2TN or telephone Barnley (0228) 88141 Ext. 286.

Closing date for applications will be April 22, 1983.

South Yorkshire County Council is an equal opportunities employer.

South Yorkshire County Council
SETTING THE PACE



(3172)

Wrexham Maelor Borough Council

MANAGER

Wrexham Information Technology Centre

SALARY CIRCA £11,000

The Wrexham Maelor Borough Council, together with a group of interested industrialists is establishing an Information Technology Centre as part of the industrial development programme on the Whitgate Industrial Estate at Wrexham. The Centre will provide training in the first instance for 30 young people in industrial microelectronics, computing and electronic office skills. The development of marketable services and products is to be encouraged and as part of the Authority's industrial development programme it is envisaged that some of the persons trained will develop the necessary skills to establish their own business. Accordingly, there will be a strong link between local industry and the Centre. A Manager with relevant experience and qualifications is required to establish the Centre as an important facility for expanding the use of microcomputers in the community and providing skilled personnel for the business sectors of the area.

Assistance with temporary housing accommodation and reimbursement of removal expenses will be considered in appropriate cases. Initial three year contract.

Applications, which should be a comprehensive C.V., should be addressed to Personnel Officer, Wrexham Maelor Borough Council, Guildhall, Wrexham LL11 1AY. Tel. No. Wrexham 384811, Ext. 48.

Closing date: Wednesday 20th April, 1983

PER WREXHAM TEL. 384811



SALES BIT

Quality of Management—47 You can't leave everything to recruitment agencies

AN external recruitment consultancy carries out much the same process as one might perform for one's self.

The main differences ought to be (and I say "ought to be" advisedly, for there are some inadequate recruitment companies around) the presence of superior copy-writing skills, access to discounted advertising, the provision of client anonymity, and above all the ability to devote its operation to handling response with the kind of urgency, commitment and understanding one would wish for one's self.

Recruitment companies are not typically more discerning or perceptive than the average sales manager. Their interviewing technique ought to be more polished, but they are no more likely to identify inadequacies such as dishonesty and laziness than one's self, no less susceptible to being seduced by smooth talking "guarantee hoppers".

The real strength of external consultants is their devotion of effort to the recruitment process in contrast with the sales manager who has too many demands from his sales team, clients and other business for him to ignore everything but recruitment for, say, a couple of weeks.

It is well established that good salespeople are extremely difficult to find and those who do decide on a change of employer usually become fickle about whom they wish to speak, and the effort they are prepared to make in pursuit of an advertised job opportunity.

Many a potential candidate makes only one attempt to contact advertisers, perhaps on impulse. If he does not receive a prompt response to his telephone call, the chances are he will not bother to try again.

The high cost of advertising and the even greater cost of untrained sales territory makes it essential that no potential candidate is lost through lack of ability to respond positively whenever such unpredictable calls occur.

Having said all that, I may have created the illusion that advertising automatically generates a large volume of response and the task of the recruitment agency is merely to sort it all out.

Nothing could be further from reality. At present response to all advertising is poor, relative to the volumes enjoyed, say, a couple of years ago. And this is not exclusive to sales personnel, or even to the computer industry.

The head of a large media company recently told me that the response to advertising for proven people with special skills and experience had fallen considerably of late.

This was a surprise to me particularly in the light of the current levels of unemployment.

Many of those who are currently in secure jobs appear to consider the world too unsettled and uncertain to take career risks.

Consider all those salespeople who did not achieve their numbers last year.

At least those with a record of past achievement are likely to receive some latitude from their present management, whereas failure is unlikely to be tolerated with similar liberality in a new company with no track-record to substantiate their ability to sell successfully.

This has a real influence on those who might otherwise be thinking they would like to change employers or wish to respond to an advertisement.

But back to the external recruitment consultancy. The biggest mistake most sales managers make is to consider the arrangement a one-way process - "the task is sub-contracted to a third party so there is no role for me to play other than making the final choice".

Again, nothing could be further from reality.

There is much to be done, especially when an external recruitment consultancy is involved. Here are some considerations that are crucial to the success of a consultancy-based recruitment exercise:

- Candidates short-listed by the consultancy must be seen immediately;
- Limit the assessment and selection process to a maximum of two interviews;
- Remember the interview must be a two-way sell;
- The interviewer must totally understand the job specification;
- Do not limit the search to "Jesus Christ Superstar";
- There must be continuity of action throughout the selection period;
- Remember the candidate's first loyalty is to himself;
- If you cannot give a formal offer of employment now give a "letter of intent";
- Remember that as the selection period increases the chance of recruiting successfully decreases;
- Consider that the cost of not recruiting is effectively equal to the expected profit from on-target performance;
- Bear in mind that a recruitment campaign from initiation to getting the required people on-board could take well over 10 weeks (which usually means you should have started at least a couple of months ago!)

Alan Williams

PUZZLE ANSWER

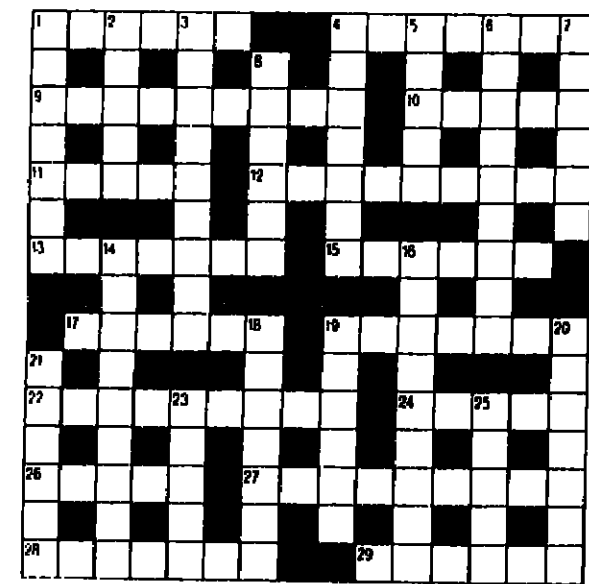
212/606 = .3498 (recurring). If I is not specified, there is another answer: 242/303 = .7986 (recurring).

Johnnie Lita

Prize Crossword No 39

Compiled by Alec Robins

A prize of £10 will be awarded for the first correct entry opened. The second and third solutions opened will receive £5 each. Entries to Crossword Competition, Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS, by first post Friday, April 15. Please use a ballpoint pen to complete the crossword, and include a telephone number at which you can be reached during the daytime.



Name..... (Miss, Mrs, Ms, Mr)

Address.....

Telephone.....

I accept the rules and conditions of the Computer Weekly Crossword Competition.

Signed..... Date.....

ACROSS

- Goodness! - Albert's in an overshoe (6)
- One that wounds a leading actor about to go back in retirement (7)
- Rose, for example, loud, scowling, waving brush (9,5)
- Something worth having when beside sink (5)
- Reg quotes at random - it's fantastic (9)
- Shiny material, mostly - truly light in tone (7)
- Restrain noisy dog looking head (6)
- Stableman having unusual role about the highway (6)
- Nuclear development association regret recoiling at order (7)
- Fundamental reason to shout encouragement at a trial (4-5)
- Comfortable homes in South protected by meshed screens (5)
- Deal with tricky situation, and risk falling in pond? (5,2,4,3)
- Cancels return of children without permit (7)
- A mug, one likely to have a loaf around the East (6)

DOWN

- Empty talk was stupid, causing coarse laughs (7)
- Seems all right in the midst of deprivation, almost (5)
- Kind of biscuit pudding before dinner? (9)
- Discharge from employment, an indication of failure, initially (4,3)
- A passage, a place that's insulated (5)
- Cow-sled search, in response to petition (2,7)
- Masseur has hours in dark collapse post (6,6)
- Sarah tripped up, to collapse - her position in the race? (4,2,3)
- The girl is brought into Middle-Eastern port to act as despot (9)
- Harsh, unrefined-sounding CO, American (7)
- Incidents still upset good man (6)
- Wrongly catch teacher in this place, d'you say? (7)
- Forced a pay increase in new and old pence (6)
- Codswallow and radical remain in a tight spot (5,5)

RULES AND CONDITIONS

- Each competitor may submit no more than one entry.
- The competition is open to all readers of Computer Weekly with the exception of the staff of IPC Business Press Ltd, any printers employed by them or the near relatives of any such staff.
- The solution of each puzzle will normally be published in the issue three weeks after the puzzle has been published.
- Winners will receive their prizes during the month following the competition.
- The decision of the editor on the interpretation of the rules and conditions and on all matters shall be final. No correspondence will be entered into.

Manager

Information Technology Centre
Cambridge £10,860 +

To help combat youth unemployment, Cambridge City Council is sponsoring the establishment of an Information Technology Centre. The aim is to train 30 unemployed young people annually in industrial microelectronics, computing and electronic office work. The development of marketable products and services and the wide use of the centre to meet the needs of the community will be encouraged.

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The man or woman appointed must have management experience, an ability to liaise with a wide range of people, a knowledge of computer applications and programming and the enthusiasm to meet the challenge of this new concept.

Starting salary will be £10,860 but could be more depending on experience and qualifications. An attractive range of benefits includes assistance with relocation and provision of temporary accommodation, where appropriate.

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City of Cambridge

An equal opportunity employer

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Manufacturing Engineering Co., seeking to expand programming capacity, has vacancy for PROGRAMMER, with minimum of two years' experience in RPGII, living within daily travel of Hounslow. 37 hour week, no shifts, would consider reduced hours.

Please apply to Miss M. Frost, Personnel Manager

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Dynatech Microsoftware Ltd. has a range of easy-to-demonstrate and use English language programming systems for IBM PC, Commodore machines (inc. 64), Apple II, Sirius/Victor 5000, available now or in the very near future, and wishes to complete its appointment of local area distributors covering the UK. Excellent commission/discount, training, support provided.

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CONTRACTS

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IBM COBOL IMS DB/DC ANALYST/PROGS. SURREY

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IBM COBOL IMS DB DL/1 ANALYST/PROGS. SURREY

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For further details contact NIC POLAND TLP

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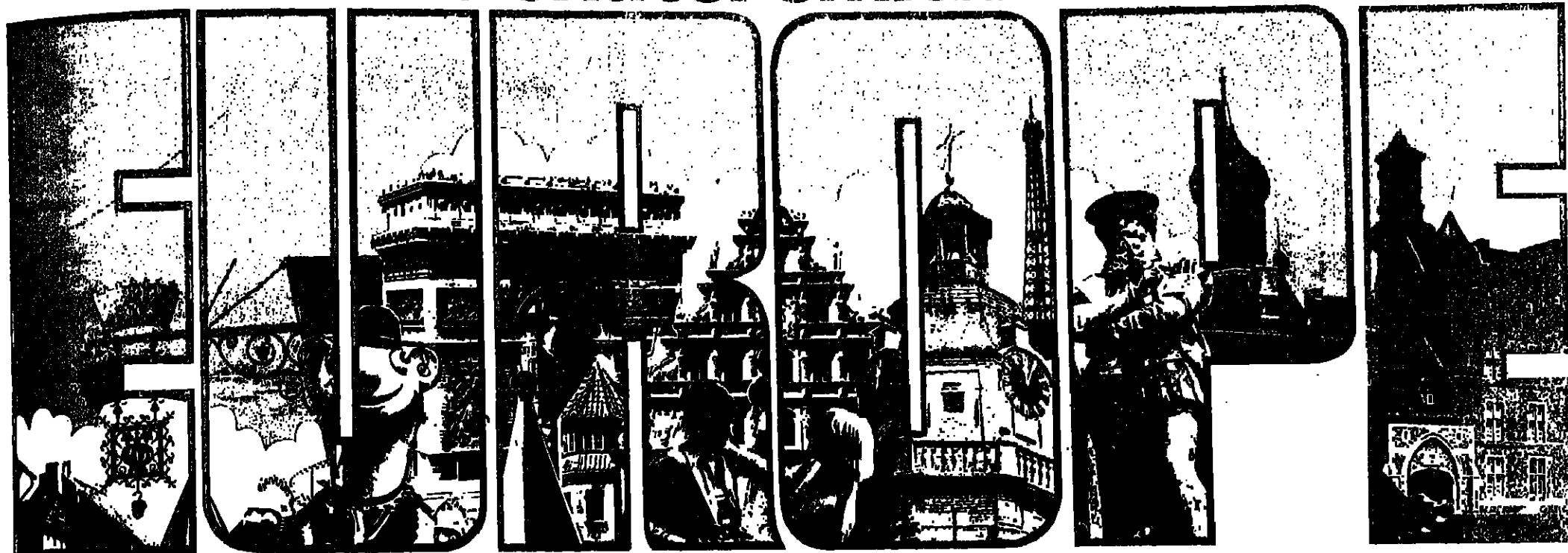
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Fortran Programming knowledge and previous experience within the Steel/Heavy engineering/or process control industries. Start June/July '83. CW/E/22

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Our client is engaged in major office automation development and is seeking 6 proven Systems Designers to play a key role in this important programme.

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Start May/June 1 year+ contract

Project - This project leader will co-ordinate the activities of a small team engaged in equipping a business computer. Based on the Motorola 68000MP, with a new Cobol compiler.

Provide - Proven Systems Designers with a proven track record in the design and implementation of Cobol/Motorola 68000MP systems.

SYSTEMS DESIGNERS (2)

Our client is engaged in major office automation development and is seeking 6 proven Systems Designers to play a key role in this important programme. The project leader will co-ordinate the activities of a small team engaged in equipping a business computer. Based on the Motorola 68000MP, with a new Cobol compiler. Provide - Proven Systems Designers with a proven track record in the design and implementation of Cobol/Motorola 68000MP systems.

PERMANENT OPPORTUNITIES

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Exceptional tax free salary plus superb range of benefits.

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CONSULTANTS Holland

A highly respected systems consultancy with a well-developed client base, is seeking professionals with a background in either process control, petro-chems., or graphics to provide high-level expertise to major organisations within Holland. Candidates will enjoy working in a problem-solving and advisory capacity and should be able to combine proven hardware/software expertise with strong communication skills. An ability to speak Dutch is not essential. An attractive package is offered including full relocation and co. car. Ref CW/E/14

CONSULTANT/PROJECT MANAGER West Germany — U.K. based

A leading international consultancy with an impressive record of growth requires a German speaking professional to spearhead and develop a major initiative in W. Germany. Candidates should possess marketing and project management skills together with experience of real time systems and communications, minis/mainframes particularly IBM/ Nixdorf or Siemens. Ref CW/E/15

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CLIENT ENQUIRIES WELCOME

If you have a genuine motivation to take up the overseas challenge, call me, Ray Parker, without delay on either 01-491 4653 or contact me between 6.30 p.m. on 19 April on 01-681 7656. Alternatively, please forward your curriculum vitae. Initial telephone interviews can be arranged for those currently abroad.



(3126)

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Loading computer and peripheral maintenance company requires reliable and hardworking Sales Engineers to promote and sell its services throughout the UK. A background in computer service and a knowledge of contract negotiation would be desirable. Basic salary plus commission, company car and other benefits should result in an attractive package.

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